Textile World
NUARY, 1957
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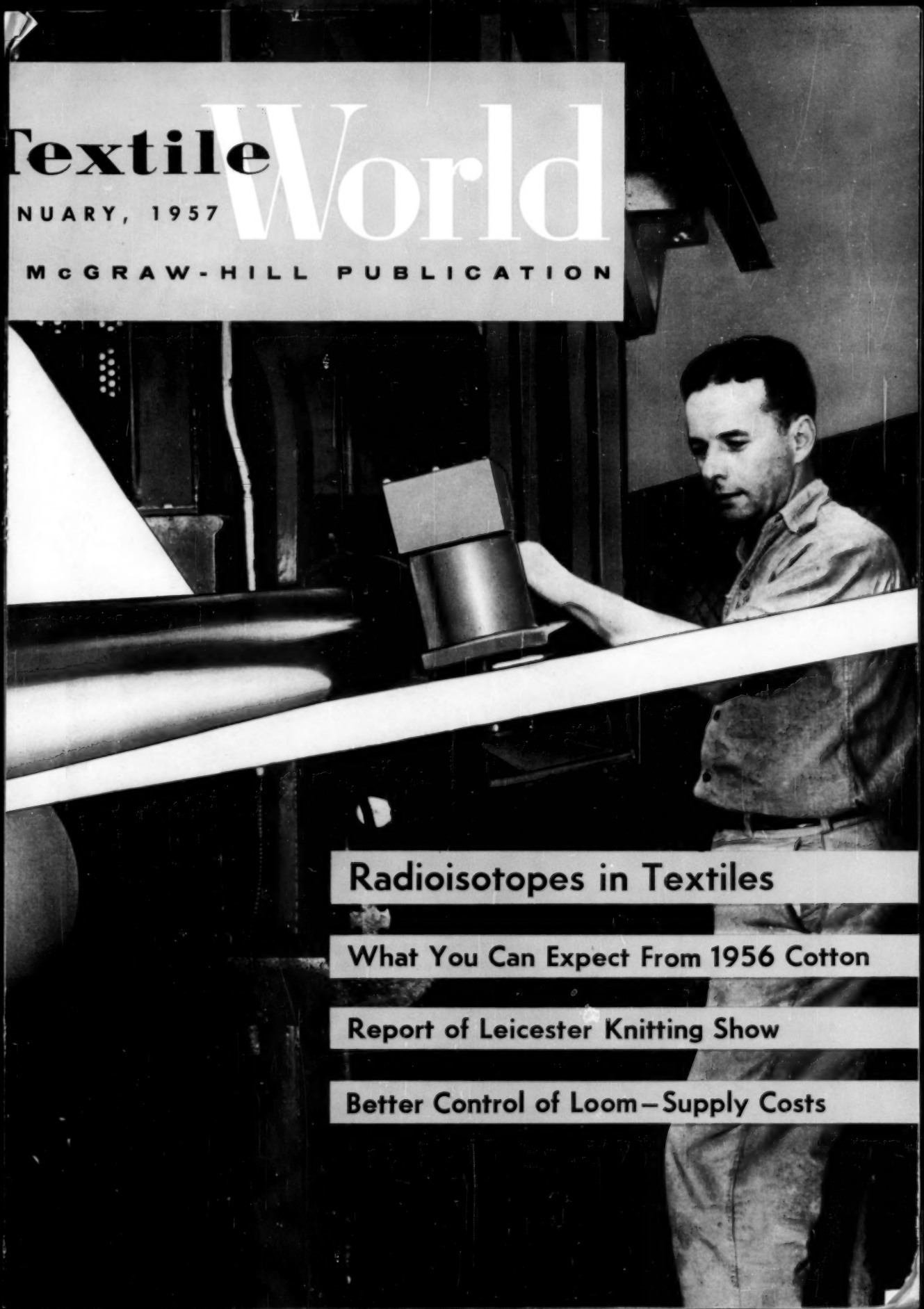

Radioisotopes in Textiles

What You Can Expect From 1956 Cotton

Report of Leicester Knitting Show

Better Control of Loom–Supply Costs

It's clear to see—

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Perma Fix-45 reduces color bleeding to a minimum, it increases fastness to high temperature washings.

It represents a new high in achievement of fast colors on synthetics.

Perma Fix-45 also reduces crocking—

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- **effects little or no change in dyed yarns or fabrics**
- **used in combination with resins and finishes**

Dyers will like Perma Fix-45 for its EASY APPLICATION • QUALITY RESULTS • LOWER COSTS

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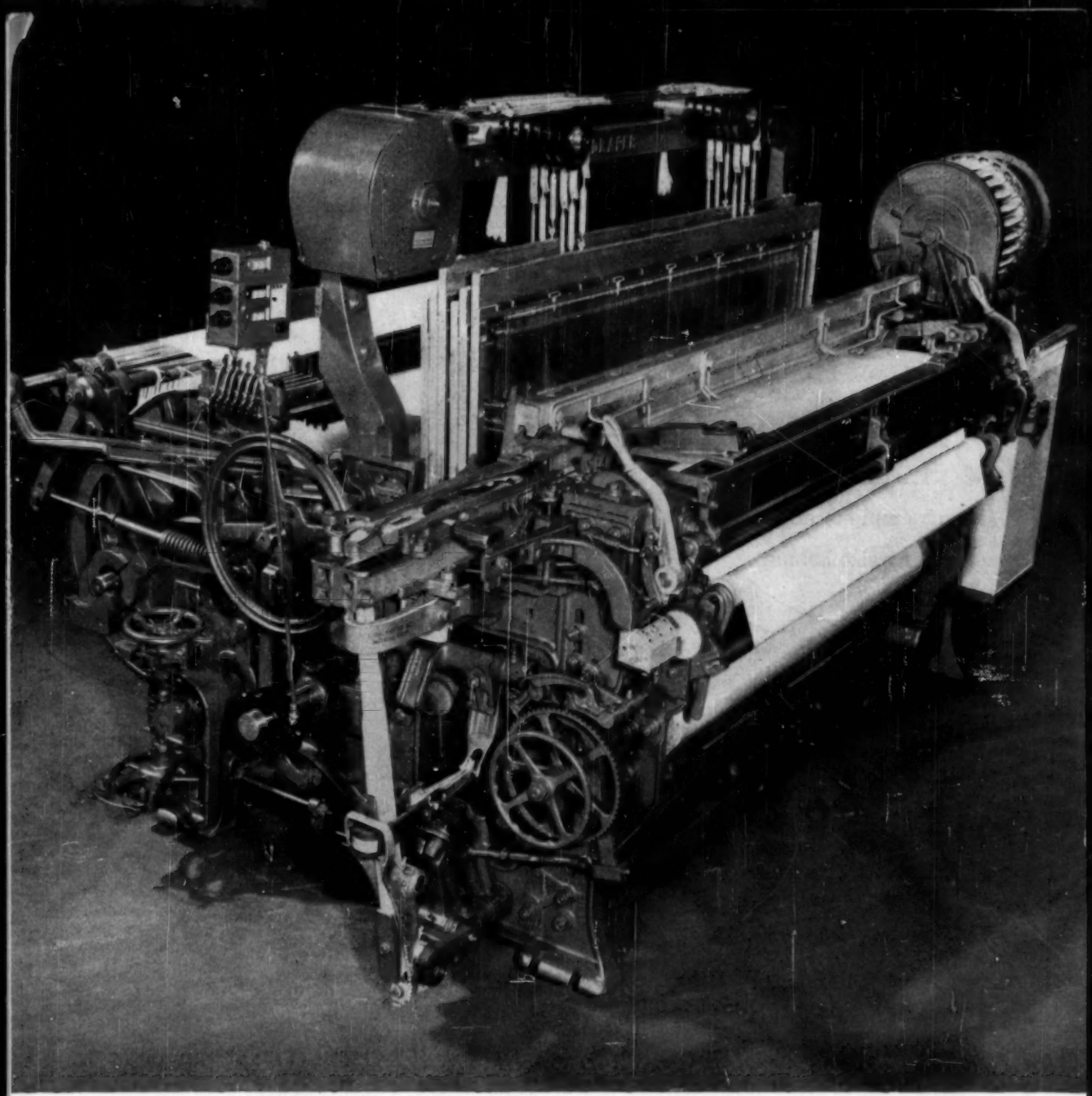

This loom gives you all the competitive advantages

Long range flexibility, practical and economical operation, higher production, increased efficiency and a new low in maintenance cost are major benefits offered by the new Draper X-2.

The changing fashions in cotton and synthetics create a need for a loom which can be converted on short notice to weave a wide variety of fabrics.

The X-2 with its ability to weave cottons or synthetics equally well, answers this conversion problem.

The combined advantages of the Draper X-2 mean . . . higher mill profits.

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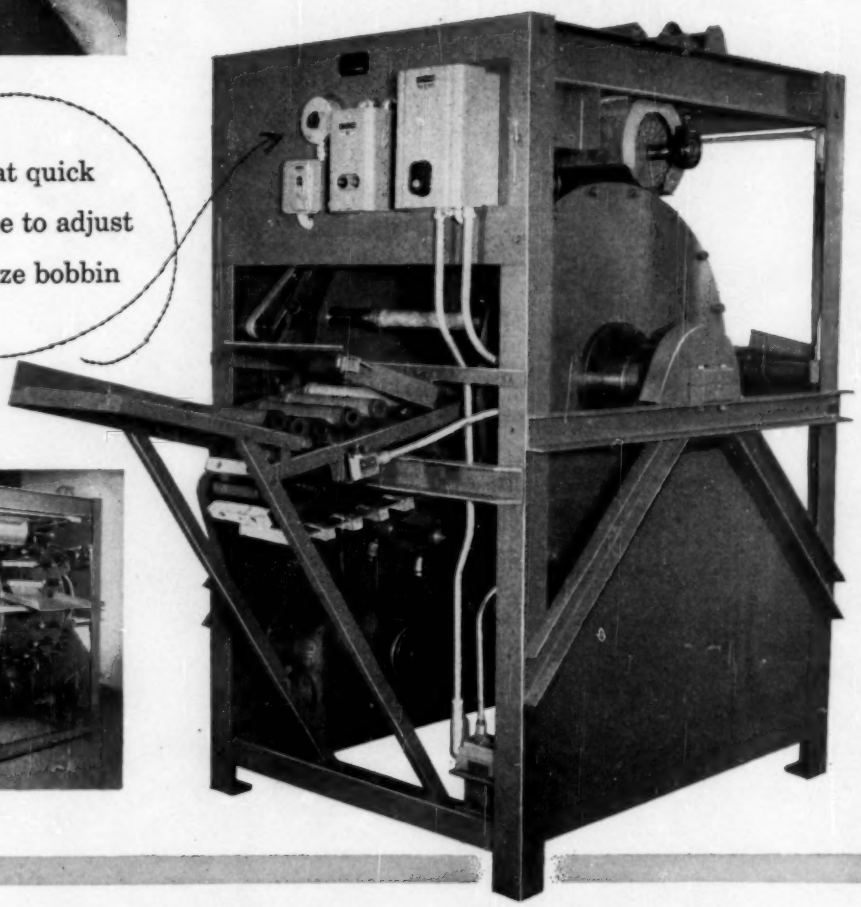
With the Comer Turley Bobbin Stripper you

DIAL for any bobbin size!

It's that quick and simple to adjust to any size bobbin



HERE IS AUTOMATIC bobbin stripping that saves time . . . ups profits. Perfected in one of the nation's largest mills and tested under actual mill operation. A twist of a knob and you change bobbin length—8, 9, 10, or 12 inches. The Comer Turley strips any type of roving from the bobbin—cleans up to 60 per minute! Dial-a-Bobbin stripping eliminates "down time" . . . no more manual adjustment of stripper for various size bobbins.

Comer Turley Stripper assures less wear and tear on your bobbins. No part of the stripping mechanism touches the bobbin surface. Inside of bobbin is whisked clean as a whistle—no waste to get into yarn . . . fewer imperfections. Roving is unwound at high speed as powerful suction pulls away every strand. This fluffs roving so that it can go directly back to the picker, not to the waste room.

THE COMER TURLEY STRIPS AND CLEANS EVERY SIZE ROVING BOBBIN USUALLY FOUND IN ANY MILL. Write for full story *now!*

Also remember, West Point makes BOTH Multi-Cylinder and Air-Dri Slashers . . . You have a choice with West Point.

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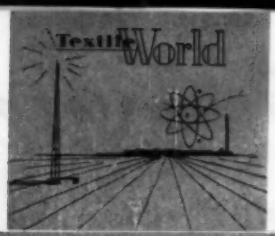

Developments To Watch

WRINKLE-RESISTANT WOOL . . . for summer suits may result from a two-year research program sponsored by the Wool Bureau. The work will be done at Fabric Research Laboratories, Inc., Dedham, Mass. All-wool fabrics of varying constructions will be studied to determine the relationship between wrinkle resistance and yarn number, weave, structure, and fiber characteristics.

SYNTHETIC-FIBER PAPER . . . "may not have all the qualities of woven fabric, but it may have enough of these qualities—produced at a low price—to compete," says S. J. Hungerford, an official of Du Pont of Canada Ltd. He further says that the paper industry is "eagerly eyeing markets that textiles now enjoy."

NYLON TIRE CORD . . . may have a 200-million-pound market by 1960, according to present predictions. From 4-million pounds in '51, nylon's tire-cord market rose to 65-million in '56. For this reason, the price of high-tenacity rayon for tire cord was cut twice last year.

1957 FALL AND WINTER COLORS . . . for man-made fibers and silk will feature jewel-like shades in after-dark fashions, says the Color Association of the United States. Colors will include "electric pink," "star emerald," "dancing gold," and similar exotic shades.

For woolen and worsteds, "Southwest shades" and "desert pastels" will share the spotlight. Colors will be based on Indian hues and scenic tones.

Slated for wide promotion in knitted fashions and other clothes for resort and cruise wear will be colors such as "sunset coral," "blue aqua," and "cholla green." Various shades of red, blue, and green will also be used.

Important winter colors will be tone-on-tones in the brown-to-beige range, such as "burnt sand," "Vienna coffee," and "cocoa beige."

The new color cards will have 40 colors for each of the two categories of fibers.

DACRON . . . will be used in place of Orlon to make sails for boats if the curtailment of Orlon production continues, say sailmakers and suppliers.

AUTOMOBILE SEAT BELTS . . . could save 10,000 lives annually and prevent 1-million injuries if properly used by all drivers and passengers, traffic engineers estimate.

The Narrow Fabrics Institute is underwriting a program of public education that it hopes will end the existing confusion concerning more than 100 makes of belts on the market. The institute will cooperate with all responsible organizations that are endeavoring to develop methods of testing and orderly marketing to protect the public.

PERMANENT TEXTILE EXHIBIT . . . at a new Design Center in London is expected to pay off for British manufacturers. Products to be exhibited are selected by the Council of Industrial Design on the basis of suitable materials, fine workmanship, and good design.

Sales are not made at the center, but potential customers are directed to manufacturers and distributors concerned with the products. Visitors average 2,500 a day, many from foreign countries; and the center is expected to spur both domestic and export sales.

PIMA S-1 ACREAGE . . . will be increased from 45,300 acres in '56 to 89,357 in '57. Increased demand is attributed to the decrease in support prices from 90 to 75% of parity and to the promotion program sponsored last year by producers.

COTTON SPORT SHIRTS . . . in many new weaves will soon hit the market. Estimates are that 85% of all sport shirts now being produced for spring and summer wear will be made of cotton, compared with 65% in '55 and 76% in '56.

PARTIALLY ACETYLATED COTTON . . . can be spun more easily if 10 to 20% untreated cotton is blended with the modified cotton or if antistatic agents are applied. Tests made at the Southern Utilization Research Branch, USDA, shows that a blend of 20% cotton and 80% PA cotton runs almost static free. Strength retention of the blend after heating compares favorably with the PA control cotton.

"FOAM YARN" . . . with high insulating qualities and low specific gravity will be made by a new process developed in Germany. The basic material, called Moltopren,

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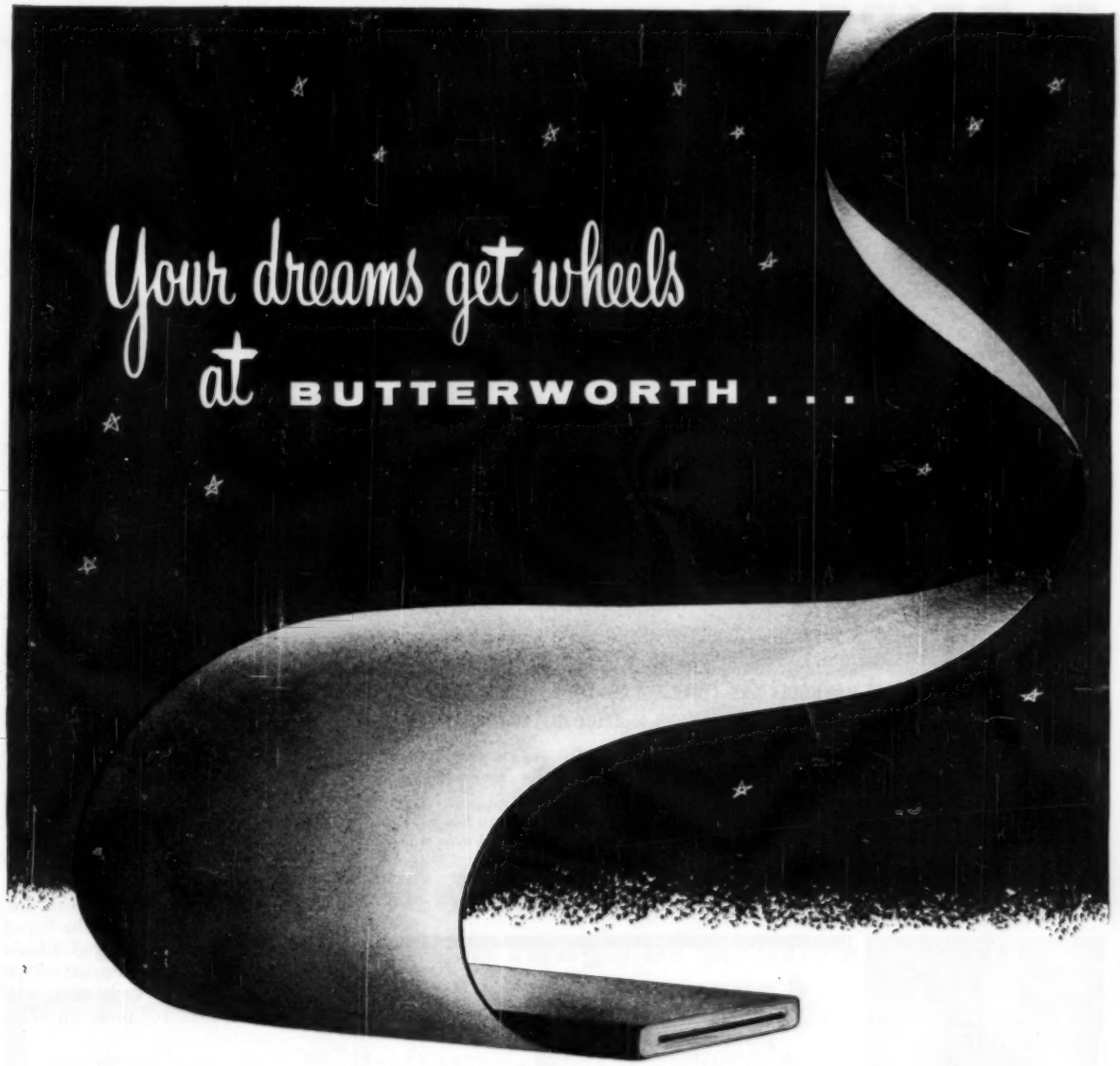

A new fiber . . . a new chemical . . . a new special finish . . .

Your ideas get rolling, when you team them with Butterworth Developmental Engineering. And the results can mean new horizons for the textile industry, new profits for you.

Butterworth engineers, equipment and manufacturing personnel become yours, to mechanize your idea into reality. Butterworth Developmental Engineering bridges the gap between your natural or synthetic fiber and a complete plant, between your new process and a complete range, or between that new special finish and the complete machine you need. Butterworth develops *your* idea for *you* . . . from blueprint to production line, or anywhere in between . . . and in complete secrecy.

Butterworth builds 84 standard machines for textile finishing. Let Butterworth go to work for you on an adaptation of one of these machines or a complete new machine. Add "wheels" to your dreams.

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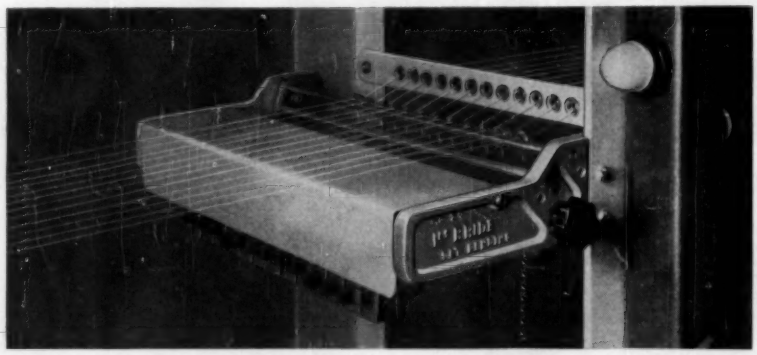
McBRIDE INSTANT STOP

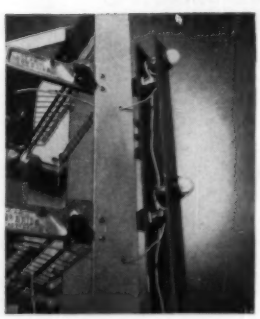
McBRIDE INSTANT-STOP FOR POSITIVE CONTROL OF WARPING ...FLIP OF A SWITCH CASTS OUT INDIVIDUAL ENDS



McBRIDE INSTANT-STOP in operating position. Red switch on right controlling entire bank is "on"; 4 switches controlling 4 drop wires on "off" position for 4 inactive ends. Note that inactive ends may remain threaded through drop wires.

DOES YOUR WARP ROOM HAVE FULL AND COMPLETE CONTROL OF EVERY END? CONSIDER THESE ADVANTAGES OF THE FAMOUS McBRIDE INSTANT-STOP:

- Instant action on any broken end. Sealed mercury switch contacts faster.
- Instant cast out of an individual end or an entire bank of ends by the simple flick of a switch.
- Inactive ends may remain in position—no lost down time when they are reactivated.
- Three sizes available to cover the complete range of yarns from 12 denier nylon to tire cord, asbestos, and even wire.
- Three way signal light. (1) Light out—creel operating satisfactorily; (2) Light on—broken end *and its location;* (3) Light blinking—threading in position.



McBRIDE 3-WAY SIGNAL LIGHT. The light channel is of heavy gauge steel that protects the wiring. It is hinged to permit ready access. Bulbs are quickly replaced without opening the channel.

These light units are adaptable to your existing stop motions.

Write us about how McBride Instant-Stop and the McBride 3-way Signal Light can be adapted to your creel situation.

Let McBride study your warping situation. You might be surprised with the costs you can save, the improved quality in the warps you produce.

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DEVELOPMENTS TO WATCH

is chemically foamed in large vats. The yarn, spun from the solidified foam after the reaction is complete, resembles single-thread worsted. Commercial production is expected in 1957.

TWO-TONE SWEATERS . . . are being dyed in England by a new process. After special processing, the wool materials are put in a dyebath to gradually develop the shading or pattern effects required. Using two different colors, a garment can be dyed red at the bottom half and gradually shaded to gray at the top half. Experiments are being made on socks and jersey fabrics.

WEBBING FOR GARDEN FURNITURE . . . will soon have both style and texture, according to Burlington Industries. Instead of the conventional solid colors and plaid patterns, the new webbing will have candy stripes, three-dimensional effects, metallic-yarn effects, and two-tone combinations.

MORE ELASTIC FABRIC . . . for swimwear will be made this year, predicts Beaunit Mills, Inc. The trend is toward woven and knitted fabrics and away from the dressmaker-type suits that hang on the body when wet. Production is expected to be up 35%.

CHANGING TIMES IN TEXTILES . . . may necessitate adoption of a special program to stay "ahead of the game and remain in business," says H. K. Hallett, vice president of Kendall Co. and former president of ACMI. He recommends this four-point program:

1. Attract technical engineers to provide liaison between spinners and the industry's customers.
2. Step up market and product research in cooperation with customers and other groups to meet consumer demands.
3. Compute accurate costs for market and profit protection.
4. Plan long range to suit the requirements of markets, new products, and capital financing.

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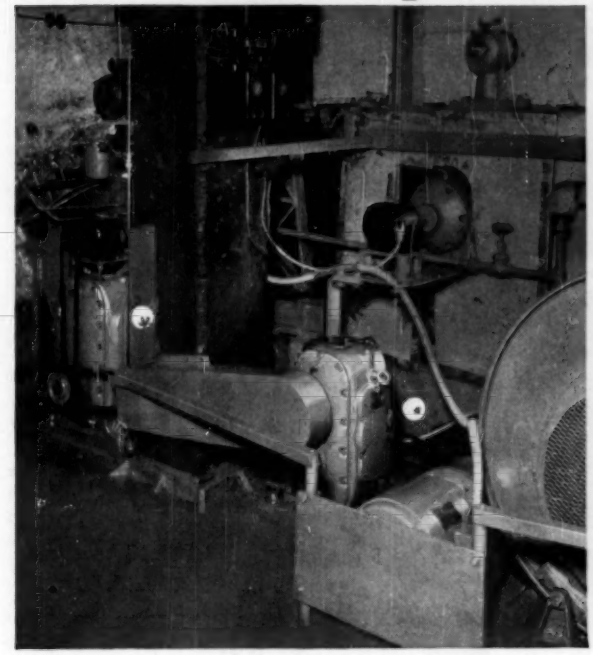
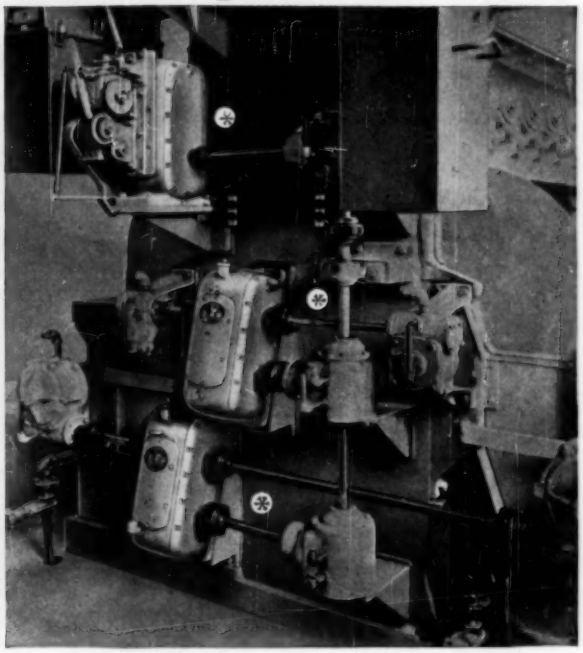
Coarse jute to fine rayon . . .

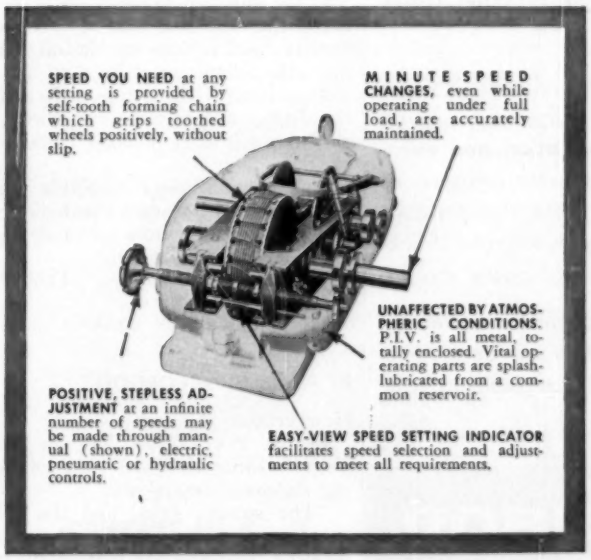


P.I.V. drives and electronic control regulate speed of winding over 3600 ends on jute slasher beam by control of moisture content of material and accumulating diameter of beam.



On 128-spindle rayon pot spinning machine, one P.I.V. maintains speed of viscose metering pumps. Two others drive godet wheels whose difference in speed determines denier of thread.

IT'S P.I.V.
for instant variation
through a complete range of positive speeds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MINUTE SPEED CHANGES, even while operating under full load, are accurately maintained.
UNAFFECTED BY ATMOSPHERIC CONDITIONS. P.I.V. is all metal, totally enclosed. Vital operating parts are splash-lubricated from a common reservoir.
POSITIVE, STEPLESS ADJUSTMENT at an infinite number of speeds may be made through manual (shown), electric, pneumatic or hydraulic controls.
EASY-VIEW SPEED SETTING INDICATOR facilitates speed selection and adjustments to meet all requirements.

Stepless, non-slip — operates independent of friction

VARIABLE for any speed, positive at all of them—Link-Belt P.I.V. accurately delivers required horsepower from maximum to minimum settings. Turn a hand-wheel . . . push a button . . . or utilize fully automatic controls. The self-pitching chain drive will engage radial-grooved conical wheels at the exact diameters required for precise output-speed delivery.

This positive chain drive—independent of friction—accounts for the unmatched accuracy of P.I.V. at all loads. Moreover, that efficiency is maintained throughout extended service life.

Your nearest Link-Belt office or authorized stock-carrying distributor will assist your selection from 8 sizes and 16 types. You can also get full data by writing for Book 2274.

P.I.V. LINK-BELT
VARIABLE SPEED DRIVE

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MODERN DYEHOUSE EQUIPMENT

THE DEPENDABLE KWG SKEIN DYEING MACHINE

KWG Double Reel Skein Dyeing Machine —all stainless steel unit built in capacities to 1000 pounds.

FOR QUALITY DYEING

WITHIN INCREASED BUT MORE NORMAL TEMPERATURE and PRESSURE LIMITS

Perfection in dyeing—for natural and the new synthetic fibers—is yours with KWG Skein Dyeing machines. Rugged construction . . . improved **'Ferris-Wheel' performance . . . give you the penetration and evenness** of color—the permanence of tone—for that extra measure of sales appeal—without concern for costly high-temperature, high-pressure methods. Dual-operations possible including scouring, dyeing and shrink-proofing, or scouring, bottom bleaching and dyeing of pastel shades.

You can point the way to extra sales . . . extra profits . . . today by writing Klauder Weldon Giles. A KWG representative will be glad to survey your needs. If necessary, he'll design special equipment to your specifications. There's no obligation.

Klauder Weldon Giles MACHINE COMPANY

ADAMS AVENUE & LEIPER STREET • PHILADELPHIA 24, PA.

Letters From Readers

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinions appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

KEEP OPEN BEARINGS CLEAN

Dear Editor:

The article "Wood Will Outlast Metal for Some Loom Parts" in the November issue was very good and brought out some points that are often overlooked. However, there is one thing that should be mentioned in connection with an open bearing, and that's carbonization.

In the mill, lint will accumulate between the shaft and bearing. As the heat of friction dries up the oil, the lint will carbonize and form an abrasive surface. This surface will wear the shaft rapidly regardless of whether the bearing is made of wood, metal, or plastic.

The open bearings of textile machinery should be cleaned periodically to prevent the lint from accumulating in them and carbonizing.

D.W.P.

Greenville, S. C.

TWIST IS INSERTED IN REVERSE PROPORTION

Dear Editor:

In the story "How Modern Are Your Twisting Methods?", the following statement was made:

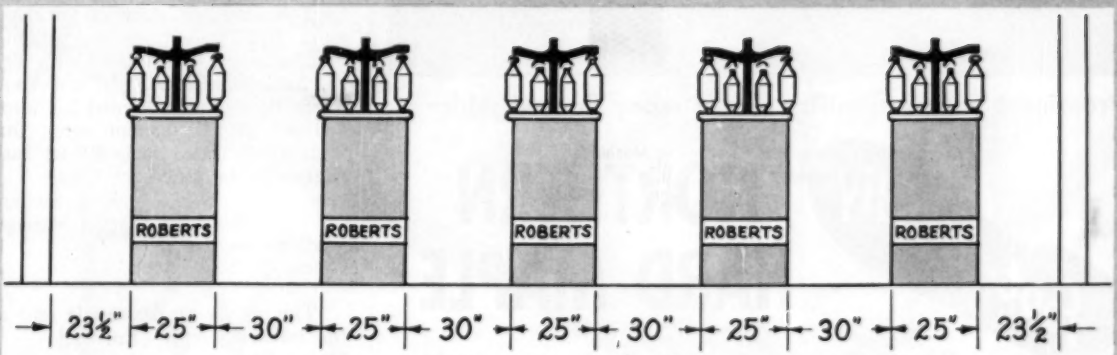
"The spindle speed and the roll speed remain constant; they therefore deliver a fixed and constant length of yarn per minute.

"The bobbin, however, is constantly

← For more data, write this page number on Reader-Service card.

NEW! ROBERTS 25 SPINNING FRAME

- **25 inches wide**
- **25% more yarn from same floor space**
- **25% less building for same production**
- **25% saving in building and utility cost**



5 frames in a typical 25 foot bay—25 inch frames, 30 inch aisles

TRIED AND PROVEN. The Roberts 25 Spinning Frame is simple and straightforward, free from radical innovations or gadgets. It embodies all the tried and proven features most wanted in a modern spinning frame giving highest production and lowest maintenance.

ROBERTS DRAFTING. Roberts Double-Apron Drafting produces highest break factors, best yarn evenness and lowest ends down in a range of drafts from 10 to 60, for yarn numbers from 2's to 100's, in cotton, synthetics or blends.

SMALL, MEDIUM OR LARGE PACKAGES. The Roberts 25 Spinning Frame is available in gauges from 3 inches to 4½ inches and can be arranged for direct filling on 8 or 8¾ inch quills or for warp up to a 3 inch ring and 12 inch bobbin.

ALL BALL BEARING HEAD. The all ball bearing head design is outstanding in its simplicity and flexibility. Thirty greased-for-life ball bearings of one size are used and all plain bearings and studs eliminated. All gears in the head are hardened and have one pitch, one width, one bore and one size key, making them completely interchangeable. Two wrench sizes fit all shafts and tightening points. Draft Constant can be varied simply from 400 to 3200 and Lay adjusted for coarse or fine numbers by a simple gear change.

STANDARD FEATURES

Included as standard equipment are Roberts Ball Bearing Spindles, Roberts built-in Suction Cleaning, Roberts AeroCreels and 8 inch Cylinder Drives.

COMPARE ALL 3

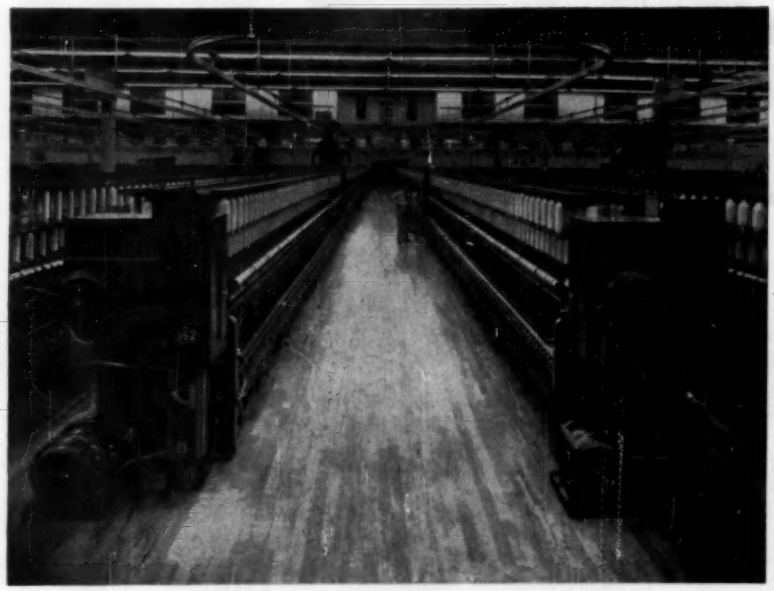
For high production, top yarn quality, large packages, low maintenance expense, dependability—and, at the lowest investment per spindle—Roberts Spinning is second to none in America today.

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

For more data, write this page number on Reader-Service card. →

Many an old-time weaver's hut had a dirt floor. We can be sure he'd have been a better weaver with a floor like this!



Prominent Southern mill—one of many floored with—

foot-friendly **NORTHERN HARD MAPLE**

When your new maple flooring bears an **MFMA** mill-mark, you can be sure it's genuine Northern Hard Maple. **MFMA** regulations assure you each strip or block is true to species.* true to dimension, true to grading. So you *know* you've got *the finest floor that grows*. And, whether your floor is laid on grade or above grade, modern sub-floor specifications give you a floor of prodigious strength — vibration-free, comfortable, bright, clean and easy to maintain. **MFMA** will be happy to provide all available data to help you. Just write —

WRITE!
for newest listing of MFMA laboratory-tested and approved floor finishes.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
Suite 592, Pure Oil Building, 35 E. Wacker Drive
Chicago 1, Illinois

Acer Saccharum

FLOOR WITH NORTHERN HARD MAPLE
BEECH AND BIRCH

building up in diameter and circumference. As the circumference is increased, the speed of the traveler is increased but the same amount of yarn is being delivered. Therefore, a greater amount of twist per inch is inserted into the yarn as the diameter of the bobbin becomes larger."

I must disagree with that statement because, when the yarn is taken off the bobbin, twist is inserted in the reverse proportion to that inserted while twisting. Therefore, no variation due to bobbin build-up exists in the yarn after it reaches the cone. This, of course, is true only if you wind from the end of the bobbin that was up on twister.

NEAL E. SELLERS, JR.
Mount Holly, N. C.

840- vs. 890-YD. HANK CLOCKS

Dear Editor:

In the article "Direct-Labor Cost for Yarn Can Be Calculated Quickly," p. 91, Nov., it is stated that spinning frames are usually equipped with 890-yd. hank clocks. We do not know where the author obtained his information, but we cannot agree that counters calculated on an 890-yd. basis are usually furnished.

F. J. SWORDS
Southern District Manager
Veeder-Root, Inc.
Greenville, S. C.

[*The author of the article sent us the following reply*—EDITOR.]

Dear Editor:

As you know, the calculations I gave were short-cuts for figuring comparative costs. Actually, a much more extensive calculation is required in cost work. We discovered, quite by accident, that some yarns had 12 to 18% contraction instead of the 6% set up as standard; so we now figure contraction for each yarn we spin.

The difference in production constants for spinning may amount to 6% if the incorrect figures are used. It is possible in such a situation that the spinning room will consistently show 6% more yarn spun than the carding room produces roving for. Since the extra 6% is paid for in hank rates, it is well worth looking into and correcting.

In ordering new equipment, the purchaser must designate, among other things, a range of yarn numbers to be run and the hank roving, twist multiplier or turns per inch, traverse, ring size, etc. to be used. From these data, the machinery engineers generally set up gear ratios for the hank clocks to

CONTINUED ON PAGE 200

THEY FIND A NEW MARKET ...BY PACKAGING

Packaging has opened up a new market for this towel manufacturer—the gift market. Merchandising a set of terrycloth place mats, towel, and apron together in a display carton, he presents Kitchen Terries as a bright and attractive gift. In a sturdy, eye-catching Framevue folding carton, overwrapped with transparent plastic film, protected from shop wear, the terries are displayed perfectly, and practically sell themselves.

MORE PROFITS THROUGH PROGRESS IN PACKAGING

CONTAINER CORPORATION OF AMERICA

38 South Dearborn Street, Chicago 3, Illinois, and 42 other cities

Corrugated and solid fibre shipping containers, folding cartons, flexible packaging, fibre cans

For more data, write this page number on Reader-Service card. →

Inside Story on POWELL GATE VALVES

Gate Valves may appear similar on the outside. But their performance may be quite another story -- for there can be a big difference in the metal, in design and in manufacture. And the inside story on Powell Gate Valves is that every valve has PERFORMANCE VERIFIED.

Only the finest materials are used in Powell Gate Valves. And painstaking quality control is rigidly enforced through each step of manufacture. For example, every machining operation is accurately gauged. All parts are thoroughly cleaned and degreased. As a final step in manufacture, EVERY POWELL GATE VALVE IS GIVEN AN ACTUAL LINE TEST.

Because of Powell's painstaking quality control, plant shutdown through valve failure is practically unknown. Records from refineries, power and industrial plants the world over prove it.

Consult your Powell Valve distributor. If none is near you, we'll be pleased to tell you about our COMPLETE quality line which has PERFORMANCE VERIFIED.

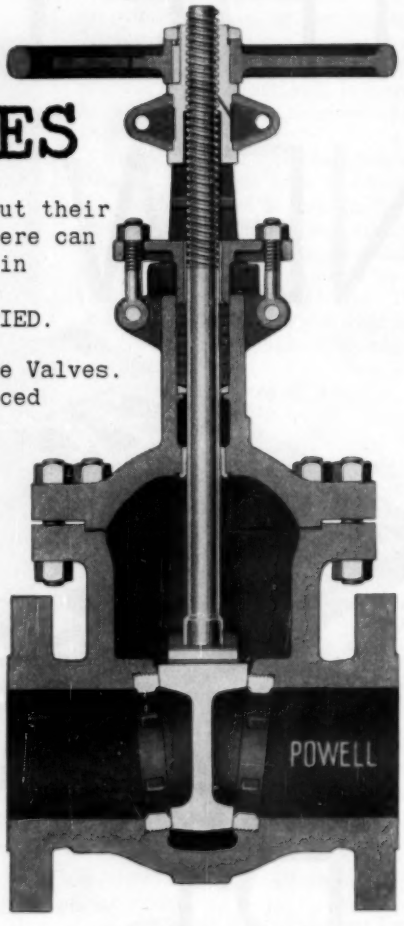


FIG. 3003 (Sectional) Steel Gate Valve for 300 Pounds W.S.P.

FIG. 500 -- Bronze Screwed-in Bonnet Gate Valve for 125 Pounds W.S.P.

FIG. 1793 -- Iron Body Bronze Mounted "Model Star" Gate Valve for 125 Pounds W.S.P.

PERFORMANCE PV VERIFIED

The Wm. Powell Company, Cincinnati 22, Ohio . . . 111th YEAR

POWELL VALVES

BRONZE, IRON, STEEL AND CORROSION RESISTANT VALVES

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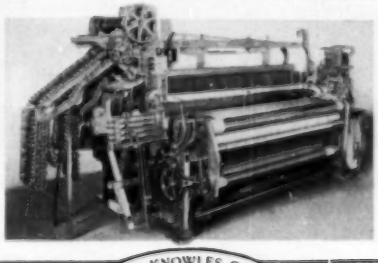
yes, it pays to *dress*

...and <u>not</u> like a mess!

When you see a person walk off with the prizes . . . in *any* walk of life . . . that person is almost always well-dressed, in clothes that are well-woven, cut and tailored. For *good* clothes are badges of self-respect that command respect in others.

Today, the street scene is brighter than ever . . . with new and different fancy fabrics that show more imagination in design than ever before. And the looms that *take the handcuffs off designers* are C&K's new Multi-Purpose line, convertible overnight from plain to fancy fabrics and back again . . . C&K's W3 and W3A Woolen and Worsted Looms with the exclusive Select-A-Pic that puts many non-automatic pick-and-pick fabrics into the profitable field of *automatic* weaving . . . and C&K Jacquards which add almost unlimited magic to many types of fabrics.

Retail slogan of the year is: "Dress right — you can't afford not to."
Slogan of the year for every weaving mill should be: "Protect your profits with C&K Fancy Automatic Box Looms — *you can't afford not to.*"



CROMPTON & KNOWLES *Corporation*

WORCESTER 1, MASSACHUSETTS, U.S.A.

Charlotte, N. C. • Philadelphia, Pa. • Allentown, Pa. • Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.
Crompton & Knowles of Canada, Ltd., Montreal, Quebec

CROMPTON & KNOWLES CORPORATION C&K WORCESTER, MASS. U.S.A.

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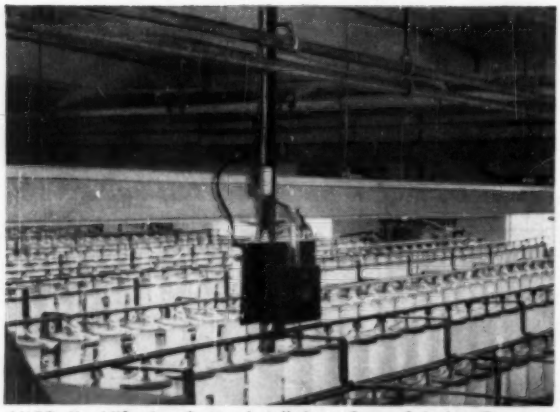
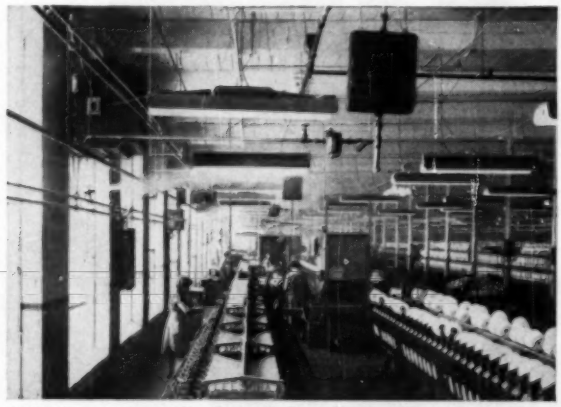
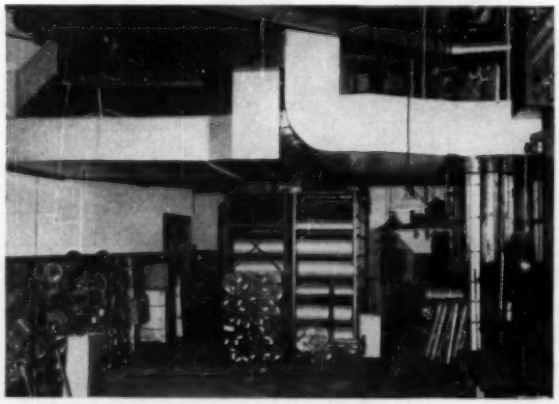


AMCO Humidification System installed at Caron Spinning Company, Robesonia, Pa. The highly sensitive AMCO Cyclestat Control holds humidity within narrow limits.



AMCO Evaporative Cooling System in Texas Textile Mills, McKinney, Texas. Note window units which control mixture of fresh and recirculated air.

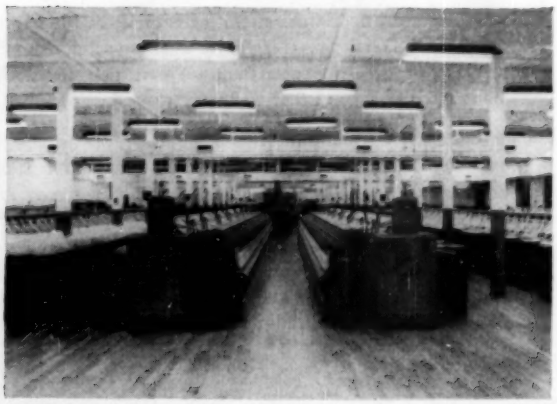


AMCO Unit Dry-Duct System at The Windsor Manufacturing Company, Philadelphia, Pa. The entire unit is installed overhead out of the way.

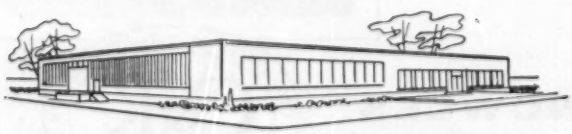
There's an AMCO AIR CONDITIONING SYSTEM designed for YOU!

When you think of air conditioning, remember that AMCO offers systems and equipment for every manufacturing requirement and every climatic condition. There are four different types of AMCO systems, alone or in combination: humidification, evaporative cooling, unit dry-duct, or central station air conditioning. And because AMCO engineers have these four basic systems — plus all associated equipment and controls — they are able to offer you unbiased advice on the *best* system for your particular need.

If you want the facts about textile mill air conditioning, with the advantages and limitations of each system detailed, as well as answers to such questions as cost, adaptability, capacity, maintenance and operating expense, write for AMCO's booklet, "AIR CONDITIONING for the TEXTILE INDUSTRY". Or better still, ask AMCO to recommend, without obligation, the system best suited to your mill.



AMCO Central Station Air Conditioning in the Roving Dept., Highland Park Mills, Charlotte, N. C. This is AMCO's highly efficient split-system.



New Cleveland-Rowan Plant of the American Moistening Company. This modern plant is located at Cleveland, N. C. for the fabrication of duct work and sheet metal products.

AMCO

AIR CONDITIONING SYSTEMS since 1888

AMERICAN MOISTENING COMPANY, CLEVELAND, NORTH CAROLINA • ATLANTA, GA. • BOSTON, MASS. • CAMDEN, N. J. • PROVIDENCE, R. I.

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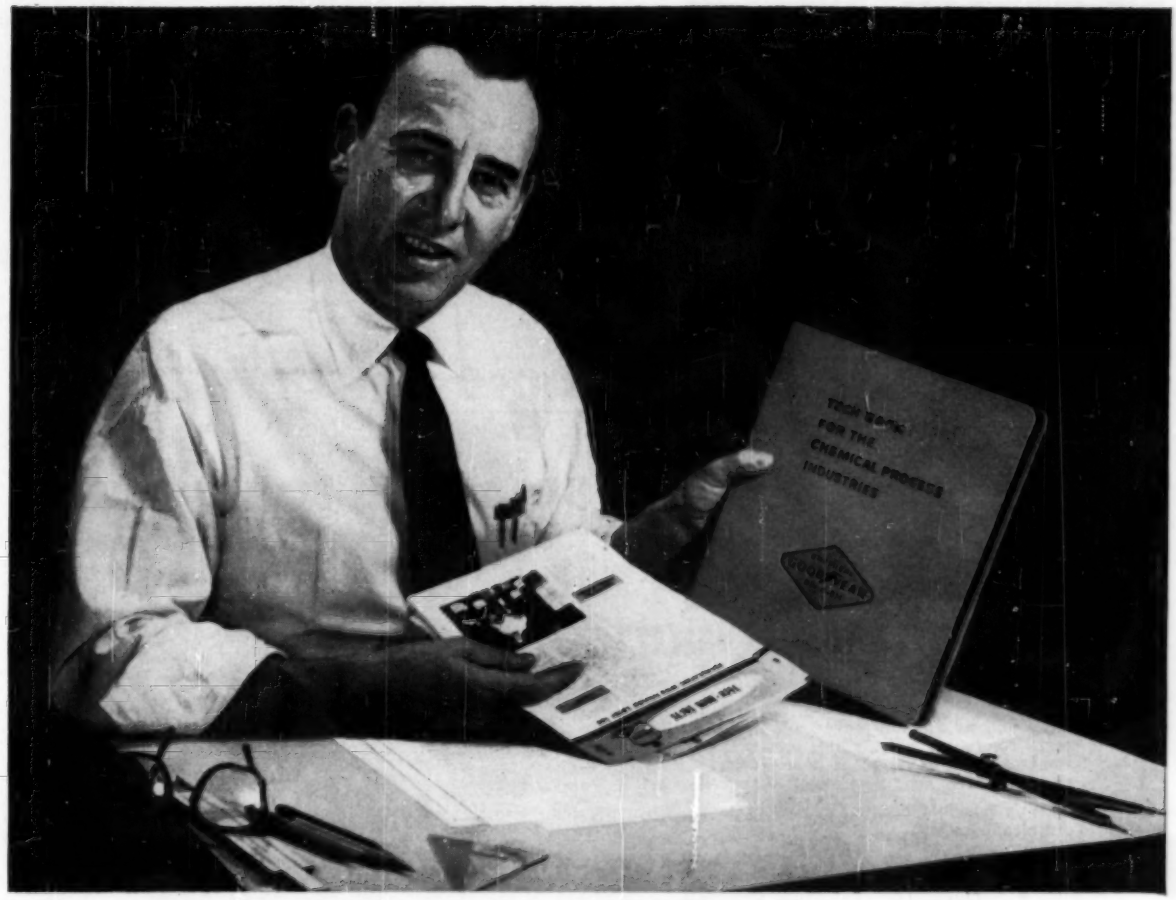

Now—A "Living Textbook" on Latex for You

Pictured above is the start of a new service to you from Goodyear. It's the *Tech Book for the Chemical Process Industries*—a compilation of technical information on the resins, rubbers, latices and related chemicals offered by the Chemical Division.

Of particular interest to you will be the sections of the Tech Book devoted to the complete line of latices manufactured by Goodyear. For here you'll find straightforward, detailed information on where, why and how to use the PLIOLITE Latices (both styrene rubber and resin types), the CHEMIGUM Latices (nitrile rubber type) and the PLIOVIC Latices (vinyl resin type) in superior sizes, saturants, inks and adhesives.

Moreover, this is just the "starter" of Tech Book service. It comes in a convenient, loose-leaf form so that it can be readily supplemented by periodic bulletins to keep *it* alive and *you* fully informed. Write today, on company letterhead, for your Tech Book and the start of the complete story on PLIOLITE, CHEMIGUM AND PLIOVIC LATICES plus other materials you can use to advantage. Address: Goodyear, Chemical Division, Akron 16, Ohio.

CHEMICAL
GOODYEAR
DIVISION

COATINGS
DEPARTMENT

Chemigum, Plioflex, Pliolite, Plio-Tuf, Pliovic—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

CHEMIGUM • PLIOFLEX • PLIOLITE • PLIO-TUF • PLIOVIC • WING-CHEMICALS
High Polymer Resins, Rubbers, Latices and Related Chemicals for the Process Industries

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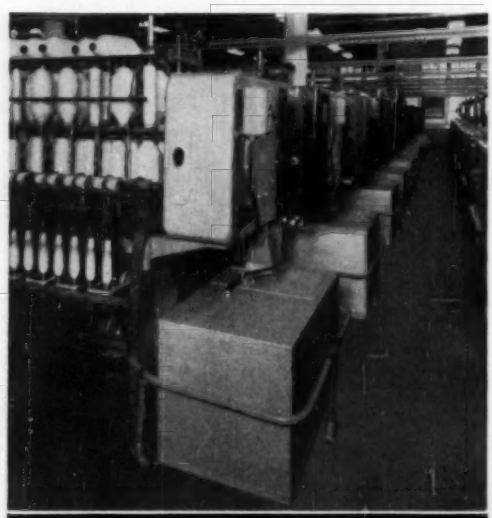


Motor alley in Spinning Room showing installation of Bahnson Central Heat Removal System.

Why our new Central Heat Removal System takes out more unwanted spinning room heat than other designs

Based on the net heat added to a spinning room in the motor alley and by vacuum collection equipment, comparative field tests conducted with mill engineers show that the Bahnson Central Heat Removal System takes out *approximately twice the unwanted heat* removed by other designs.

This is possible because our Central Heat Removal System simultaneously:

- Cools the motor alley by efficiently removing the heat generated by the frame motors.
- Removes the heat from the vacuum collection units.

Result: It provides more uniform conditions in the spinning room. It also retains the flexibility and convenience of the unit system.

If you are interested in performance and technical data on our Central Heat Removal System, or in having our representative call to discuss your heat problem, write directly to me at the Bahnson Company or simply mail the coupon below.

Agnew Bahnson Jr.
President
The Bahnson Company

Agnew H. Bahnson, Jr.
Dept. R
The Bahnson Company
Winston-Salem, N. C.

We are interested in ☐ data on the Central Heat Removal System ☐ having your representative call to discuss our heat problems.

Name_____
Company_____
Position_____
Address_____
City_____ Zone____ State_____

Bahnson COMPANY
WINSTON SALEM, N. C.

AIR CONDITIONING
VACUUM COLLECTION
CLEANING
CREELS

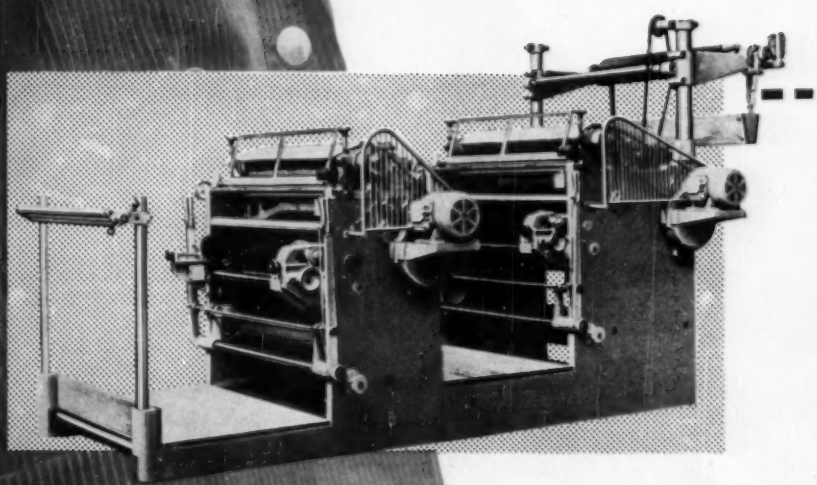
WE HELP TO SOLVE YOUR PROBLEMS:

Maximum Production,
Finer Quality,
Less Labor,

Shearing Machines for Velvet, Velveteen and Suedes.

These machines are built for wool, cotton and all man-made fibres.

Our Representatives are always in the field to give advice on all types of finishes. At all times we carry sufficient stocks of spares at our Agents' Warehouses and have our Engineers available to you.



FRANZ MÜLLER • MASCHINENFABRIK • M. GLADBACH (RHEINLAND) GERMANY

NORTHERN U. S. AND CANADA:
TEXTILE MACHINERY IMPORT CO., 277 HOYT AVENUE, NEW ROCHELLE, N. Y.

SOUTHERN U. S.:
PARROTT & BALLENTINE, 510 S. CAROLINA NATIONAL BANK BUILDING, GREENVILLE, S. C.

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Why new Dayco AP 664 Aprons improve yarn uniformity

. . . give trouble-free drafting

Smoother operation is the reason new Dayco AP 664 Aprons draft more uniform yarn, either natural or synthetic. Newly developed, highly flexible compounds eliminate drag around the nose bar, even on the latest super-draft systems.

Semi-gloss pink inner surface gives far lower coefficient of friction. This reduces chatter — indication of jerky, uneven motion around the nose bar. Non-stretch, pliable cord body assures maintenance of uniform apron tension for surer drafting control.

All through the long life of the new Dayco Apron, the compounds in the light blue drafting surface maintain just the right coefficient of friction for improved fiber alignment. Special ingredients prevent lint from coating the surface, therefore the drafting surface always remains the same.

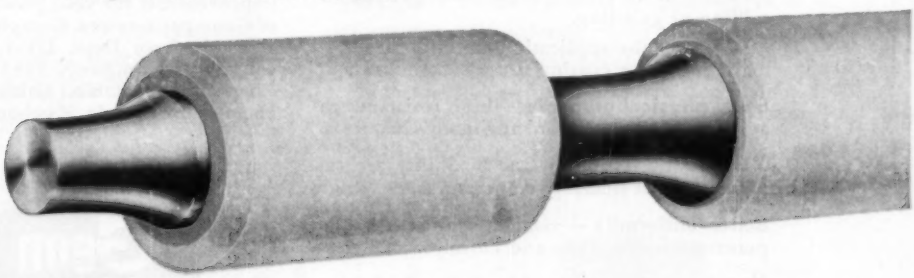
Compounded of materials which stubbornly resist chemicals or oils, Daycos instantly resume quality drafting after shutdowns. They are not affected by heat or humidity, nor will they take a permanent set. Flipped and broken aprons are a thing of the past. Dayco Aprons are available for both single and double apron systems.

Your Dayco Representative will be in soon to give you full information on how new Dayco AP 664 Aprons will improve the quality of every yarn. Or write The Dayton Rubber Company, Textile Division, 401 S. C. National Bank Bldg., Greenville, S. C.

For even greater drafting control—

New Lap-resistant Dayco EW 661 Cots offer these advantages:

- Stay dry and solid despite heat and humidity
- Dissipate static • Resist all known oils



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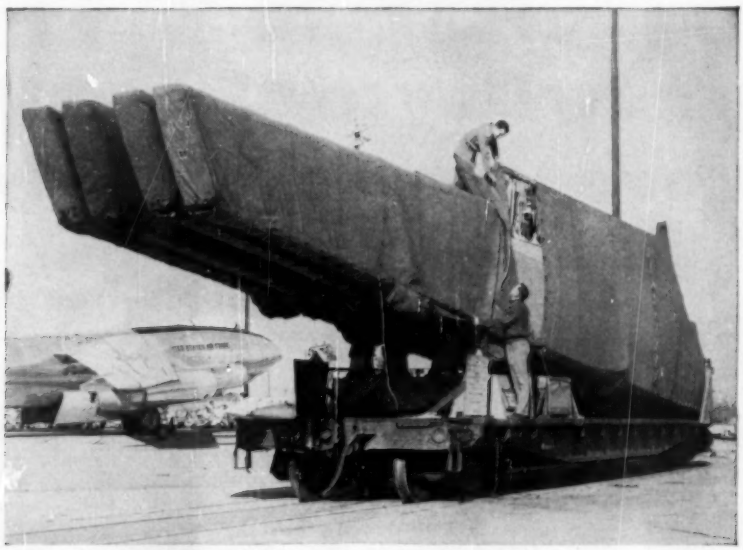
Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving

News about

B.F.Goodrich Chemical *raw materials*



Nylon covers for aircraft wings are coated with a plastisol based on Geon paste resin.

for wear, tear, and weather-resistant fabric coatings . . .

GEON RESIN 121

PLASTISOL coatings made from Geon resin 121, with their many outstanding qualities, are developing new markets and upgrading existing products for manufacturers and converters—while they save them money!

Plastisol coatings based on Geon 121 resin are easy to use—readily applied with existing equipment—by spread coating, dipping and spraying. What's more, these coatings need no milling or grinding.

Whatever the application method, these remarkable Geon coating features stand out:

Better physical properties—high resistance to aging, gas, oil, abrasion, and many chemicals.

No cracking—strength and flexibility are retained even at freezing temperatures.

Better uniformity — viscosity, thickness and penetration are easily and closely controlled.

Heavier coatings—up to 25 mils in a single pass.

No hazards—coatings are flame resistant, applied without volatile solvents.

Greater eye appeal—unlimited in color range: embossing and printed designs readily applied.

Wider range of applications—any fabric, any weave, any thickness; for luggage, upholstery, tablecovers, drapes, wall-coverings, awnings, protective coverings, tapes, fire blankets, handbags or footwear.

You gain both functional and decorative improvements for your products from the use of Geon paste resins. Complete information is available from Dept. DV-1, B. F. Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

B.F.Goodrich Chemical Company
a division of The B.F.Goodrich Company

B.F.Goodrich GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors

One of Our Most Important Services It Costs You Nothing!

Next to quality yarns and quality colors, color and yarn consultation can be one of the most important services we offer — even though it costs you nothing.

We can save you the embarrassment of selecting a shade which is unobtainable with the type of dyestuff you need, from the costly error of using dyestuffs that will bleach out, run, crock or fade rapidly, or from using yarns that may be good for some purposes, but not for yours.

On the other hand, we can recommend dyestuffs and yarns that are ideal for your purposes and that will make your fabrics more salable.

Much of this type of help is unobtainable from books (even if you had time to read them). It is information gained during nearly half a century of experience by the "largest package dyers in the world".

Franklin Process Color and Yarn Consultation is "conveniently yours" from any one of our dyeing plants, or from our New York office. Just ask and we'll oblige.

Franklin Process

Yarn Merchants and Largest Package Dyers in the World — Dyeing Exclusively on the Franklin Spring

Providence • Philadelphia • Greenville • Chattanooga
Fingerville, S. C.
New York Representatives — 40 Worth Street

X-ray view of Franklin Package — the "secret" of uniform shades. Don't say "package dyed". Say "Franklin Process Dyed".

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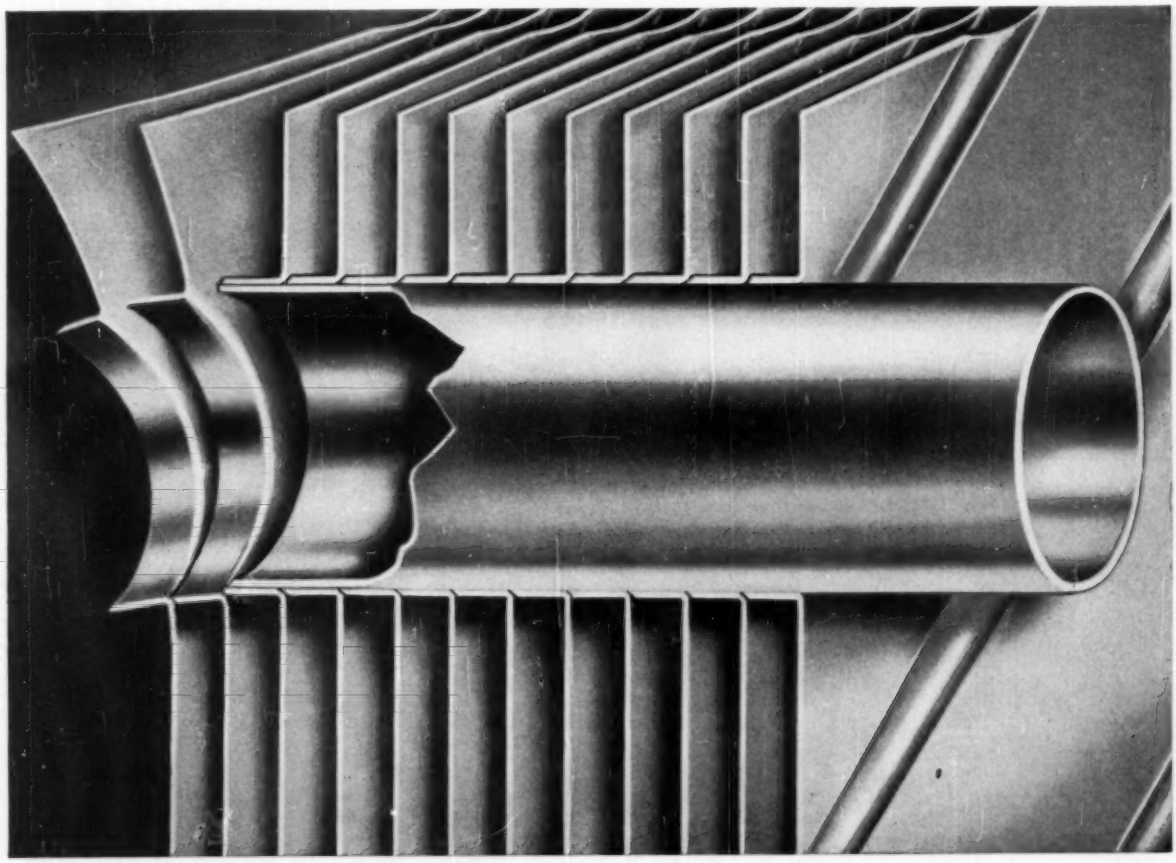


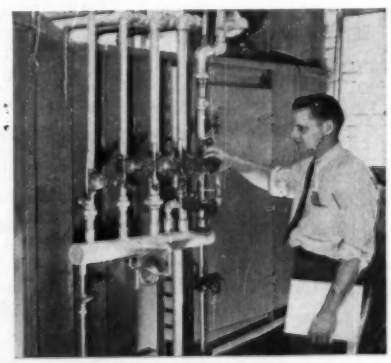
Close up . . . or on the job . . .

You'll See SAVINGS with Westinghouse Heating Coils

Westinghouse continuous plate-fin surface heating coils mean ease of installation, high performance with maximum operating economy, and long life on the job . . . plus these extra advantages:

- Low air resistance produces greater heat transfer at lower fan HP demands.
- Choice of fin materials . . . aluminum or copper, continuous plate-fins.
- Available in eighteen sizes, seven fin widths and three fin types to meet all your needs!
- *Permanent Mechanical Bond:* tubes are heat expanded into plate fin collars, forming a permanent bond for maximum heat flow from primary to secondary surface . . . provides greater efficiency!
- Available in heavy duty wrought iron piping with helical steel fins . . . for continuous duty high pressure systems and industrial process work . . . *a Westinghouse exclusive!*

Call your Sturtevant Division Sales Engineer for complete details for *your* heating coil requirements, or write Westinghouse Electric Corporation, Dept. **11A,** Hyde Park, Boston 36, Massachusetts.



Laboratory test of Westinghouse heating coils helps assure long heating life at rated performance.

WESTINGHOUSE AIR HANDLING

YOU CAN BE SURE...IF IT'S Westinghouse

J-80596

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Here's the reason

why Sonoco cones ...Sonoco tubes Sonoco spools ...and other textile paper specialties have become known as "standard of the world" wherever textiles are made! For more than 50 years Sonoco has solved the difficult paper carrier problems of the industry.. and we're fully equipped and staffed to help you too!

sonoco
ACROSS THE WORLD
PAPER CARRIERS
REG. U.S. PAT. OFF.

SONOCO PRODUCTS COMPANY

MAIN OFFICE — HARTSVILLE, S. C.

MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J.
LONGVIEW, TEXAS • PHILADELPHIA, PA. • LOS ANGELES, CAL.
GRANBY, QUEBEC • BRANTFORD, ONT. • MEXICO, D. F.

DEPENDABLE SOURCE OF SUPPLY

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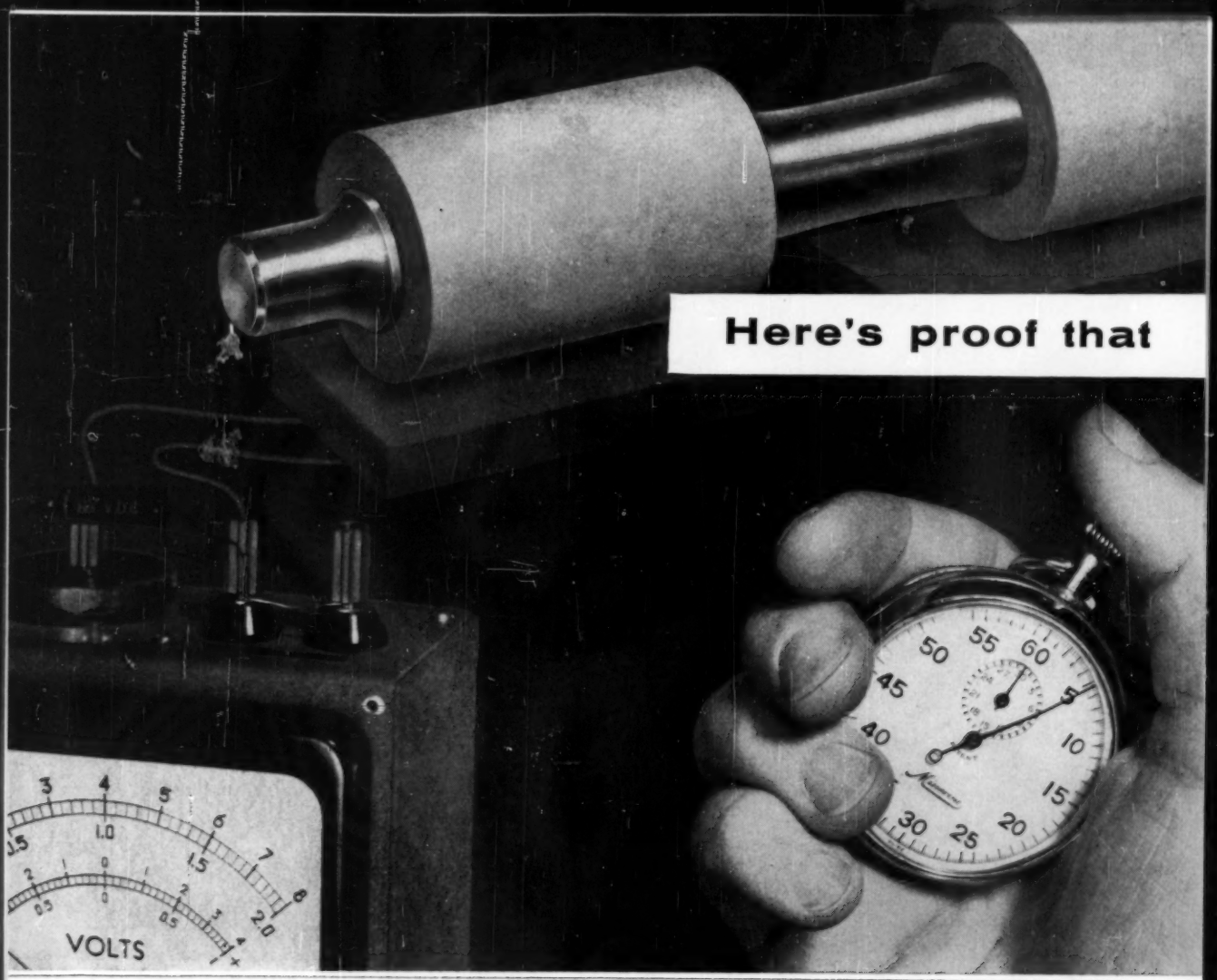
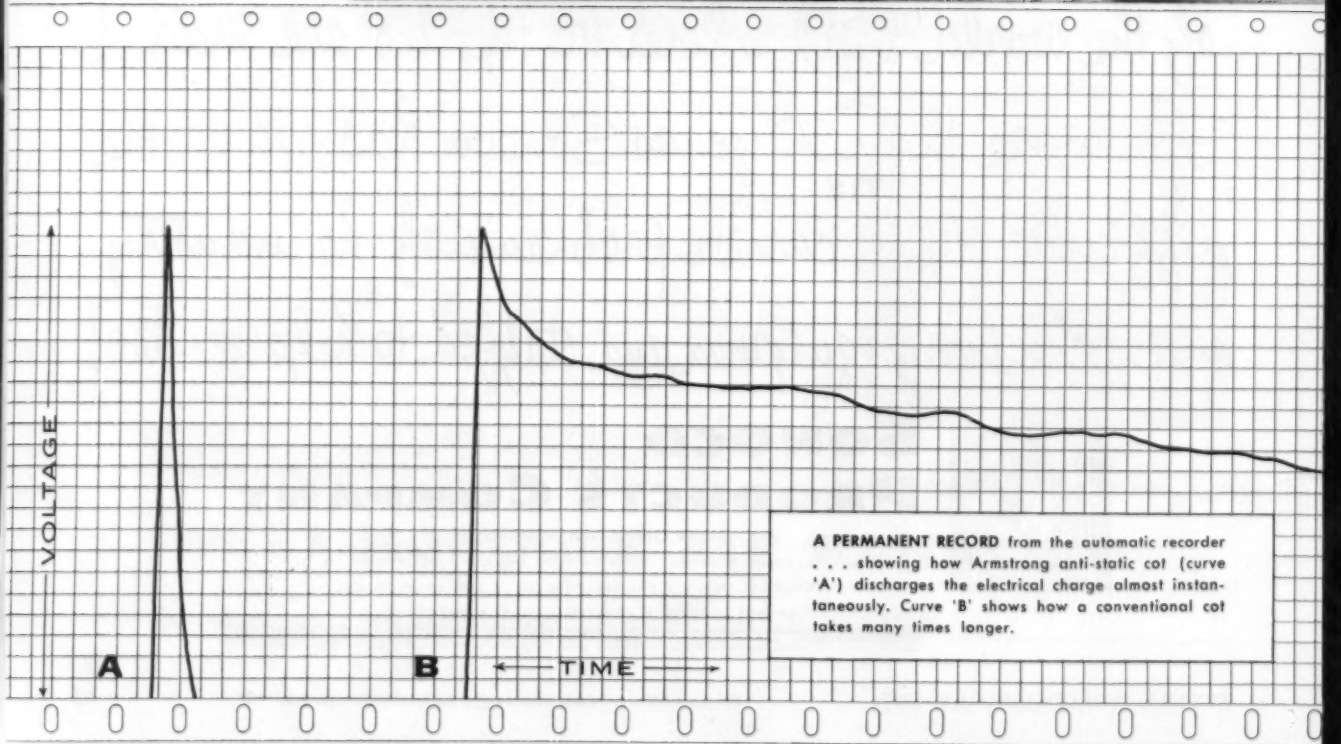




A PERMANENT RECORD from the automatic recorder . . . showing how Armstrong anti-static cot (curve 'A') discharges the electrical charge almost instantaneously. Curve 'B' shows how a conventional cot takes many times longer.

AN ELECTRICAL CHARGE is stored in a condenser by connecting its terminals briefly to a six-volt battery. The cot is placed on needle-point contacts to which the condenser is wired . . . providing a path for the electricity. A sensitive recorder automatically records the rate of discharge.

new Armstrong anti-static cots help

PREVENT LAPPING, REDUCE WASTE

If you are having trouble with front roll laps and excessive clearer waste caused by static, you'll be interested in the dramatic laboratory test shown here.

This test measures the rate at which the new Armstrong anti-static cots carry off an electrical charge. It has been proved that this accurately indicates the ability of the cots to discharge static electricity.

As mill men know, static is becoming an increasingly serious problem. The reason is the growing use of synthetic yarns, the trend toward non-metallic cap bars, and the elimination of other metal-to-metal contacts in modern frames.

Armstrong anti-static cots help to eliminate lapping conditions caused by static because they contain certain ingredients which enable the cot to carry off static charges continuously. This prevents such charges from accumulating on the yarn or cots to the point where they can cause trouble.

Extensive mill installations of these new compounds indicate that they practically eliminate lapping caused by static. In many cases, they also significantly reduce waste.

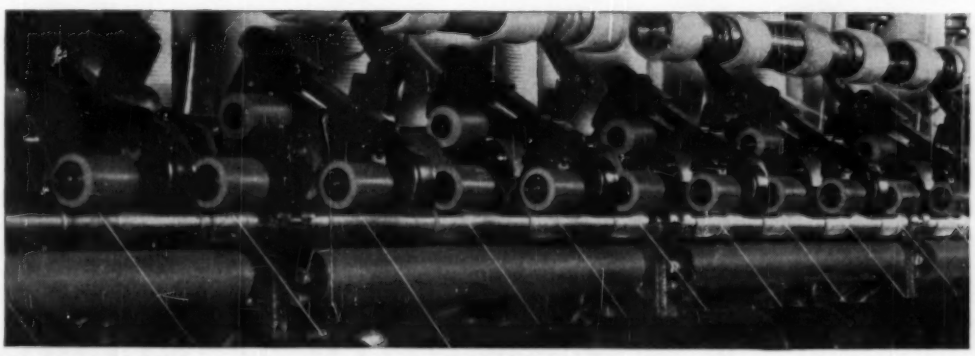
Like all Armstrong Accotex® Cots, these new roll coverings will give years of service. Rebuffing (rarely necessary more than once a year) doesn't impair their built-in anti-static properties.

Together with Accotex J-490 Cots, the new Armstrong anti-static materials form a complete group of cots which will control lapping on spinning and cardroom frames. Where high static aggravates the lapping problem, these two new compounds are recommended: Accotex NC-762 for frames with flat clearers and Accotex NO-764 for frames equipped with revolving clearers.

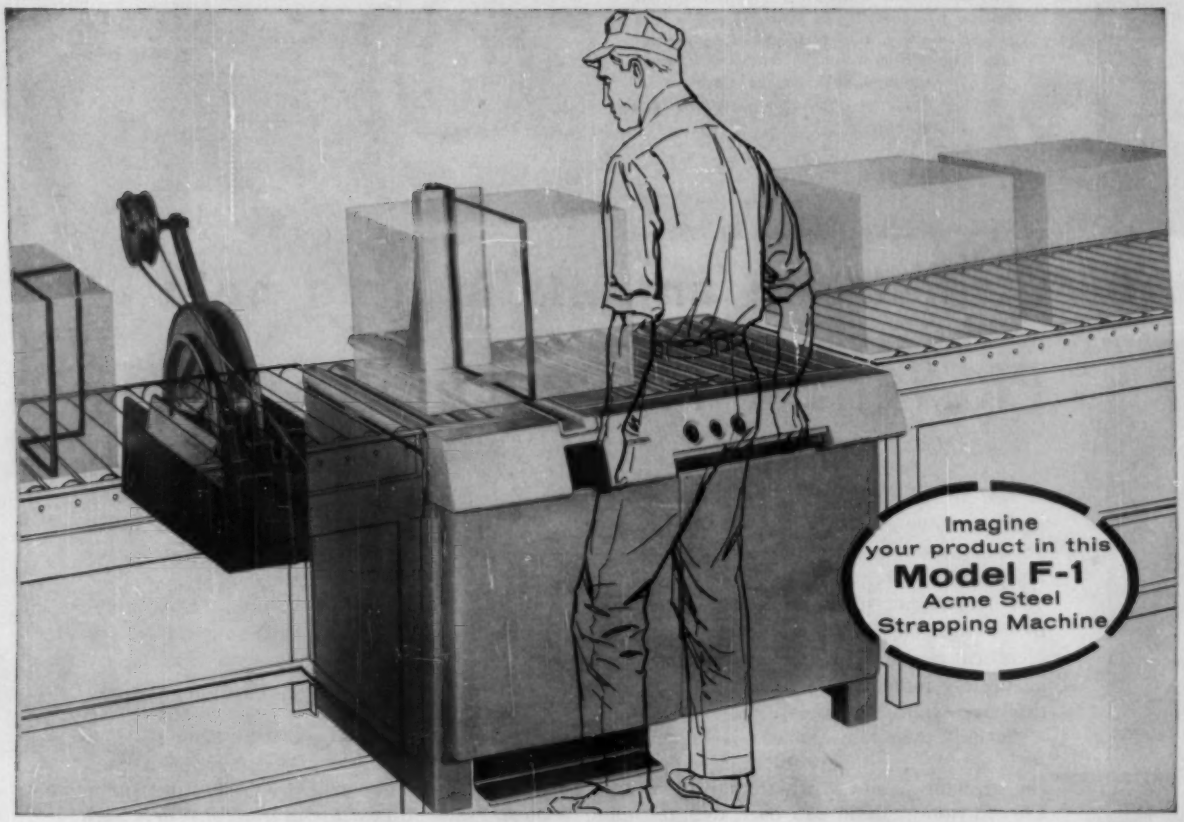
Be sure to write for more information on these anti-static cots. Address Armstrong Cork Company, Industrial Division, 6501 Dauphin Street, Lancaster, Pennsylvania.

Armstrong ACCOTEX COTS

. . . used wherever performance counts

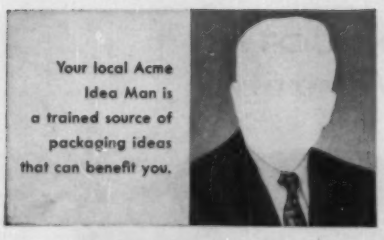


NOT A LAP-UP IN SIGHT . . . on this modern frame equipped with Armstrong anti-static cots. Even when spinning synthetic fibers, these specially compounded cots carry off the static electricity before it can create a lapping problem. In many cases, these cots also help reduce waste.



Line up your AIM*. . . others find it pays . . .
Let this idea machine break packaging bottlenecks

YOUR ACME IDEA MAN can prove to you, as he has to others, how the Acme Steel F-1 Strapping Machine breaks high volume packaging bottlenecks. This Idea machine, designed for straight line packaging procedures, speed-applies steel strapping to help you ship your products in safe, secure, tamperproof, economical packages. And its fast, push-button operation lets even intermixed package size variations flow from production line to transportation with no delays for machine adjustments.



It's easy to operate the F-1 machine . . . operators require only nominal instruction and maintain high output levels because of less fatigue. The F-1 is electrically powered and can be made fully automatic. It is controlled with fingertip ease to automatically tension and cut steel strapping with no waste. Ends are permanently joined by two instantly applied spot welds . . . and the package is ready for shipping.

***Line Up Your Acme Idea Man Today.** Whoever he may be, your Acme Idea Man is ready to prove how the F-1 Machine or any of the Acme Steel Idea products can bring you new high standards of packaging speed, efficiency and economy. For his name, write to Dept. TAS-17, Acme Steel Products Division, Acme Steel Company, Chicago 27, Illinois. In Canada, Acme Steel Company of Canada, Ltd., 743 Warden Avenue, Toronto 13, Ontario.

ACME STEEL STEEL STRAPPING

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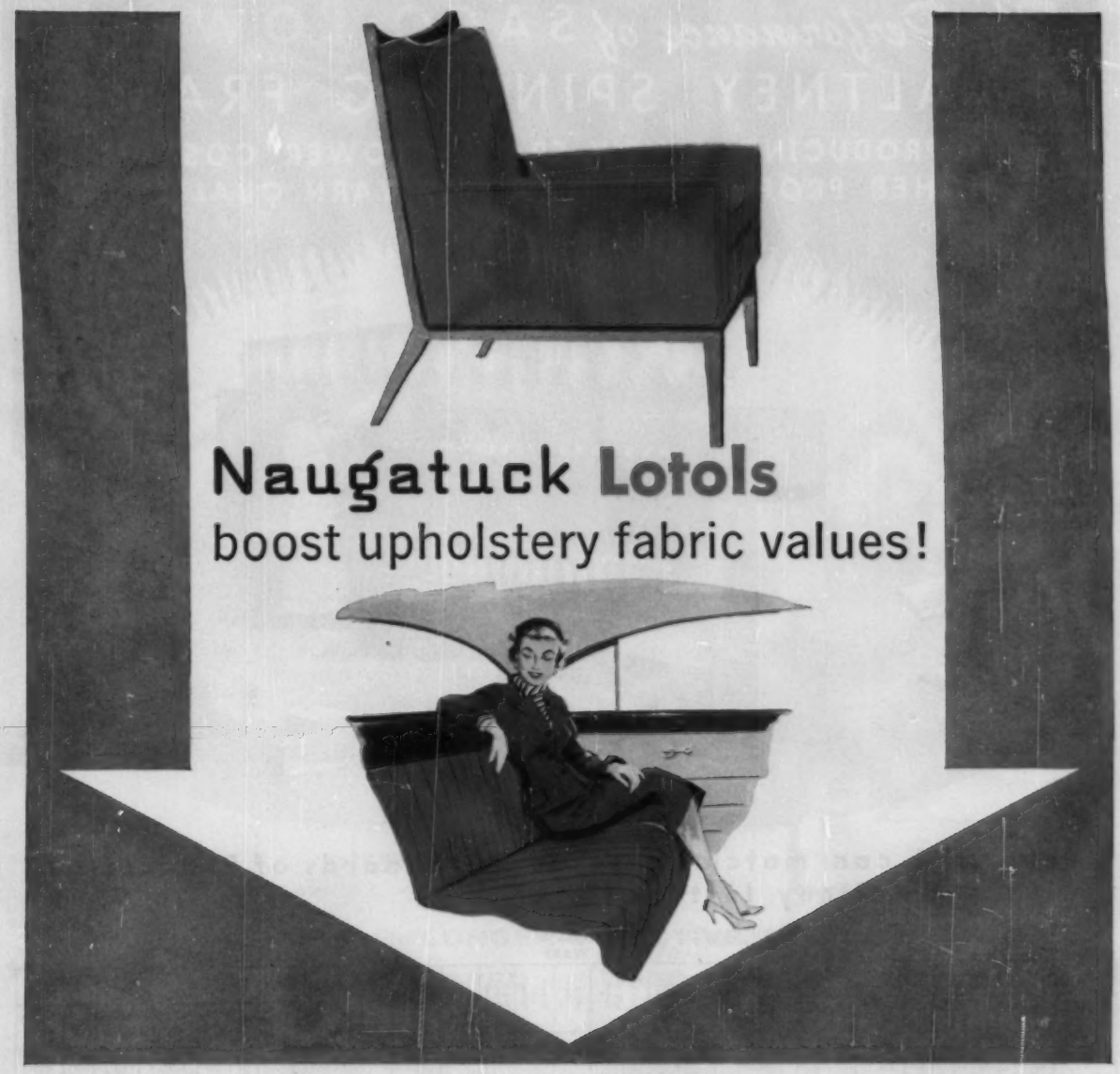

Naugatuck Lotols
boost upholstery fabric values!

BACK-SIZING modern upholstery fabrics with just the *right* formulation of rubber or rubber-and-plastic latex adds value to the fabric out of all proportion to its meager cost. Specifically, it—

- **Anchors the weave, twist or pile**
- **Eliminates raveling of cut edges**
- **Improves body and hand**
- **Minimizes water spotting**
- **Prolongs wear**
- **Maintains dimensional stability**

Leading upholstery manufacturers depend on Naugatuck's tailored-to-order latex compounds to give their fabrics added value, aesthetically as well as physically!

Such a latex, custom-compounded in ready-to-use form by Naugatuck, is sold under the trade name LOTOL. And behind every LOTOL® is the know-how that belongs to the world's leading latex producer and compounder, plus the facilities of *three* modern compounding plants strategically located at Gastonia, Naugatuck and Los Angeles to save you shipping time and expense.

SEE—Naugatuck Chemical Division, United States Rubber Company, at work on NBC's "Color Spread" TV spectacular, Sunday, March 25, 7:30 PM, EST.

United States Rubber

Naugatuck Chemical Division

Naugatuck, Connecticut

BRANCHES: Akron • Boston • Chicago • Memphis • New York • Phila. • Mfg.: Los Angeles • Gastonia • Naugatuck • CANADA: Naugatuck Chemicals, Elmira, Ont.
Rubber Chemicals • Synthetic Rubber • Plastics • Agricultural Chemicals • Reclaimed Rubber • Latices • Cable Address: Rubexport, N. Y.

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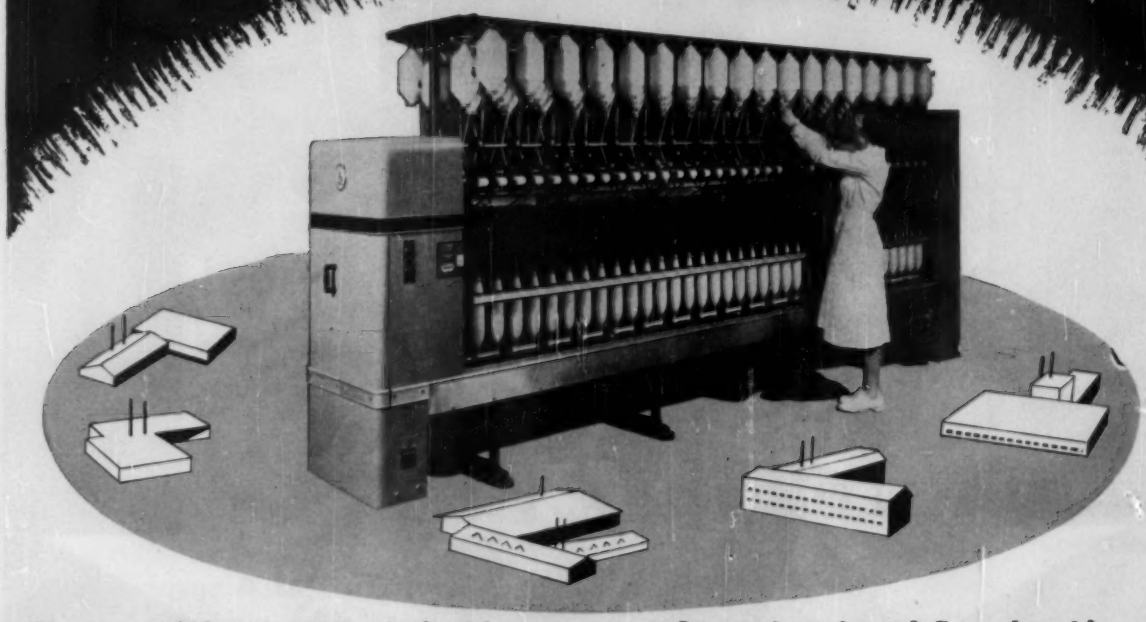
The Performance of SACO-LOWELL GWALTNEY SPINNING FRAMES*

IS PRODUCING A NEW ERA OF LOWER COSTS, HIGHER PROFITS AND IMPROVED YARN QUALITY.



Your mill can match these new Standards of Production with a Gwaltney Installation.

MILL A

Count	T. M.	Ring Size	F. Roll Speed	Eff. %*	Net Pounds Per **Frame Per 24 Hours
7.25's	2.85	3"	200	94	930
10's	2.94	3"	201	95	686
11's	2.94	3"	197	95	611
13's	2.94	3"	199	95	523
17's	3.00	3"	186	96	378
18's	3.00	3"	185	96	355
24's	3.12	3"	155	97	224
26's	3.25	3"	147	98½	200
28's	3.25	3"	143	99	182

* Efficiency includes traveler change and frame change down times.

** Taken from actual Hank Clock daily readings on 240 spindle frames.

MILL B
WARP

Count	Twist Multiplier	Twist per Inch	Spindle Speed	Ring Size	Traveler Speed	Front Roll Speed	Efficiency %	Net Production Pounds per Hour
12	4.30	14.88	8600	3.00	6754	184	94	.087
16	4.75	19.00	9100	3.00	7147	152	95	.056
20	4.75	21.24	9100	3.00	7147	136	95.2	.041
24	4.75	23.27	9100	3.00	7147	124	95.4	.031
26	4.75	24.22	9100	2.75	5109	120	95.6	.028
30	4.75	26.02	9100	2.75	5109	111	97.0	.022

MILL C

Yarn No.	16/1 (Knit)	20/1 (Knit)	22/1 (Knit)	30/1 (Knit)	16/1 (Soft)
Creeling	Double	Double	Double	Double	Double
Cotton	1 1/32"	1 1/32"	1 1/32"	1 1/32"	1 1/32"
Twist multiple	3.10	3.25	3.25	3.25	2.50
Hank roving	1.30	1.30	1.30	2.00	1.30
Draft	24.6	30.7	33.8	30.0	24.6
Ring diameter	3"	3"	3"	3"	3"
Spindle speed (rpm)	7200	8300	8300	9000	5500
Front roll speed (rpm)	185	182	174	160	175
Doff time	12 hrs.	16 hrs.	18 hrs.	24 hrs.	10 hrs.
Oz. per bobbin	12 oz.	12 oz.	12 oz.	12 oz.	11-12 oz.
Skein break (#/120 yds.)	150	120	106	78	100 approx
C.V.	.53	.75	.81	.65	.53 approx
Traveler speed (ft./min.)	5655	6509	6509	7068	4320
No. of spindles per spinner	14 sides 1680	20 sides 2400	20 sides 2400	26 sides 3120	10 sides 1200
No. of frames per doffer	18	18	18	18	18

THE ABOVE INFORMATION IS FACT . . . SUBMITTED TO US BY MILLS NOW OPERATING GWALTNEY SPINNING FRAMES.

Mills interested in matching these standards should have a Saco-Lowell Sales Engineer prepare a "Forecast of Savings" based on a Gwaltney-Saco-Lowellizing program.

*** NOW OVER 490,000 SPINDLES OF GWALTNEY IN OPERATION.**

Mill Names on Request

SACO-LOWELL
60 BATTERYMARCH STREET, BOSTON 10, MASS.
Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.
SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

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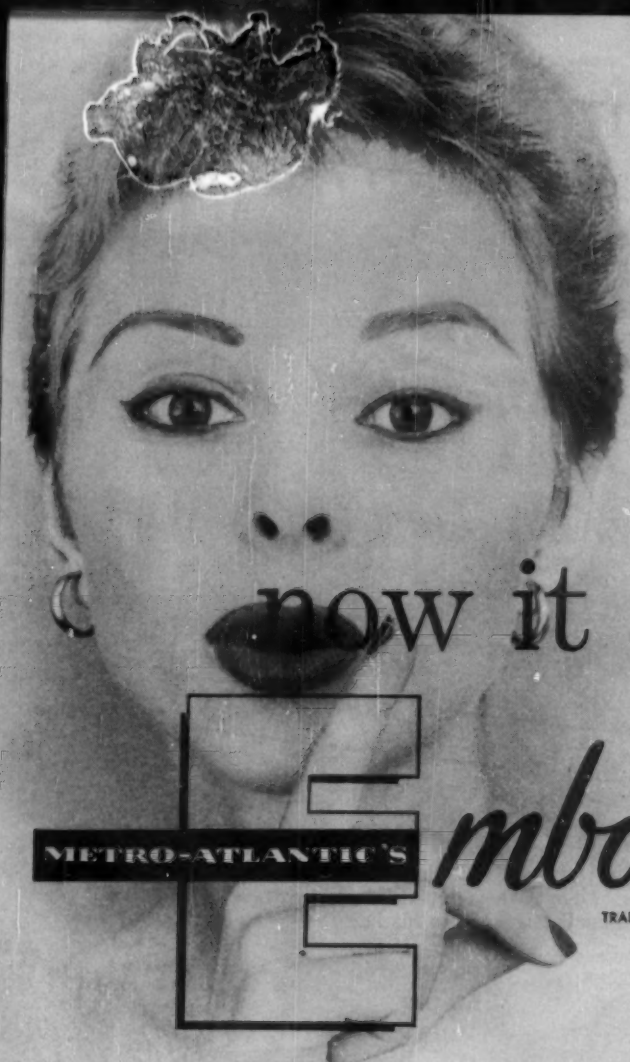


now it can be told!

METRO-ATLANTIC'S **Emboset-Z**

TRADE MARK

the **NEWEST,** *the* **LONGER-EFFECTIVE, MORE DURABLE**

CYCLIC UREA RESIN PREFERRED *and* **USED** *by the Nation's Leading Finishers.*

After comprehensive field testing in numerous finishing plants, EMBOSET Z, the new and durable cyclic urea resin, has created a growing demand in the industry for its durable fibre reactant properties.

APPLICATION TO COTTONS:

EMBOSET Z on cottons displays very *low chlorine retentive* properties demonstrating that discoloration and tensile strength loss is negligible in bleaching. EMBOSET Z is a superior resin for *"minimum care"* finishes showing unequaled crease resistance and shrinkage control combined with a minimum loss in tensile strength. EMBOSET Z is a highly effective resin for mechanical finishing. It can be used in conjunction with Ranedare-R, Ranedare-S, and Ranedare-C — Metro-Atlantic's durable water-repellents for combination finishes.

APPLICATION TO RAYON and RAYON BLENDS:

On rayon and rayon blends, EMBOSET Z has demonstrated superior crease resistance, shrinkage control, plus the added feature of a full luxurious hand, while maintaining a negligible tensile strength loss.

EMBOSET Z possesses outstanding storage and bath stability. Perfect compatibility with all the common textile auxiliaries used in thermosetting finishes make it the SUPERIOR fibre reactant resin.

METRO-ATLANTIC, INC.

Chemicals, Dyes & Intermediates

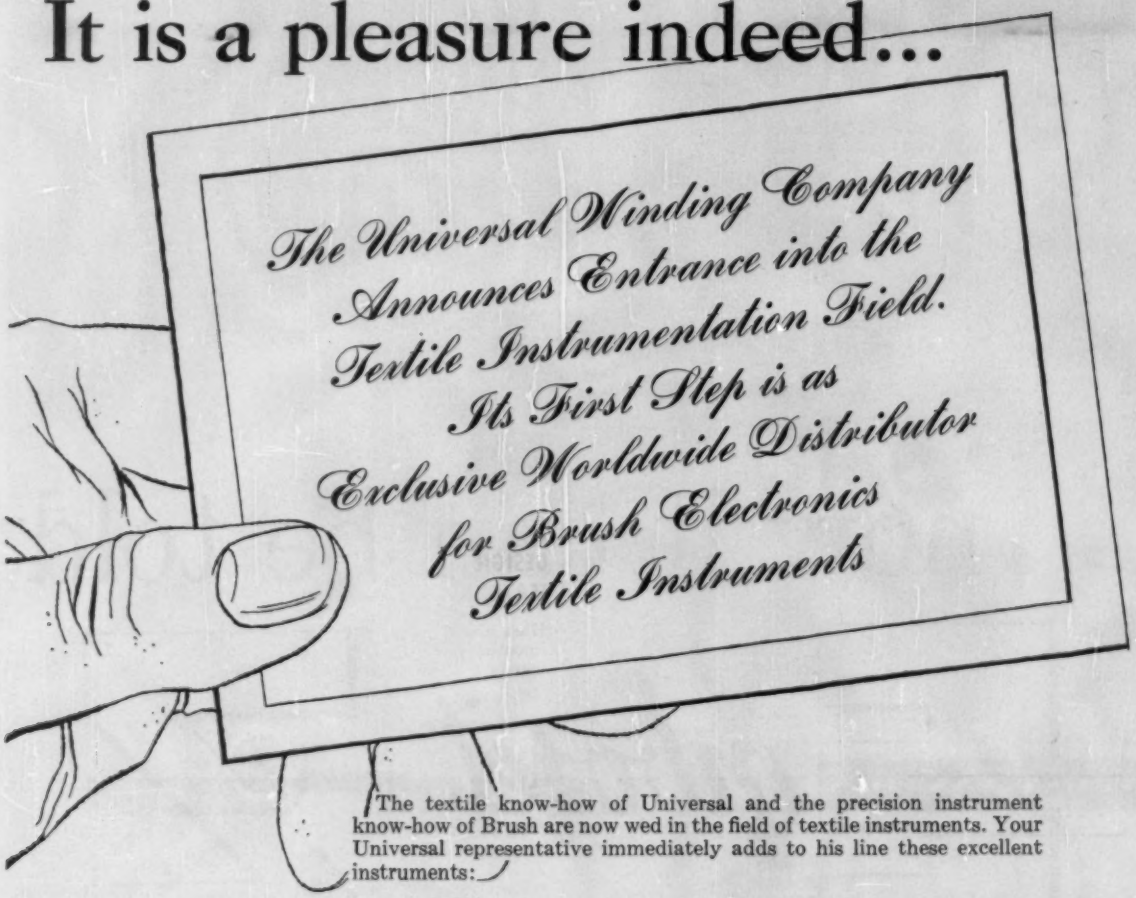
Manufacturing Plant and Main Offices
Centerdale 11, Rhode Island

Offices, Service Laboratories and Warehouses
Greenville, S. C., Fairlawn, New Jersey
Canadian Branch — Granby, Quebec

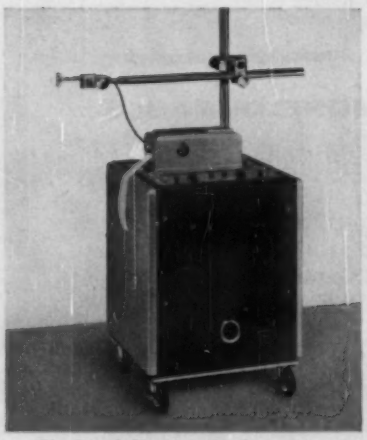
New York Sales Promotion Office — *10 East 39th Street*

Imported Dyestuff Specialties
Fabwerke Hoechst A. G. West Germany

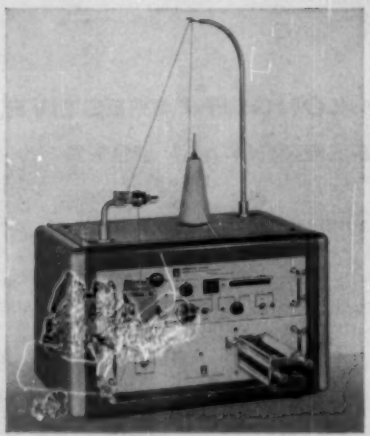
It is a pleasure indeed...



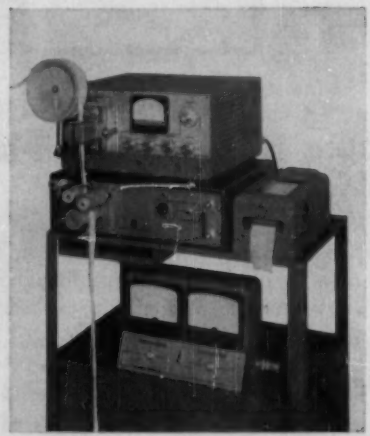
The textile know-how of Universal and the precision instrument know-how of Brush are now wed in the field of textile instruments. Your Universal representative immediately adds to his line these excellent instruments:



● *The Brush Tension Analyzer* for electronic tension measurement and control in production departments



● *The Brush Imperfection Counter* for quality control of yarn by electronic imperfection counting



● *The Brush Uniformity Analyzer* for trouble shooting and quality control from opening through spinning

231.6.1

Write to learn how Universal now serves you more broadly. In return you will receive bulletins for your reference files on the Brush Electronics Textile Instruments.

UNIVERSAL WINDING COMPANY

P. O. BOX 1605, PROVIDENCE, R. I.

Sales Offices: Boston • Philadelphia • Utica • Charlotte • Atlanta • Los Angeles
Montreal, Hamilton, Canada

Agents in Every Principal Textile Center Throughout the World

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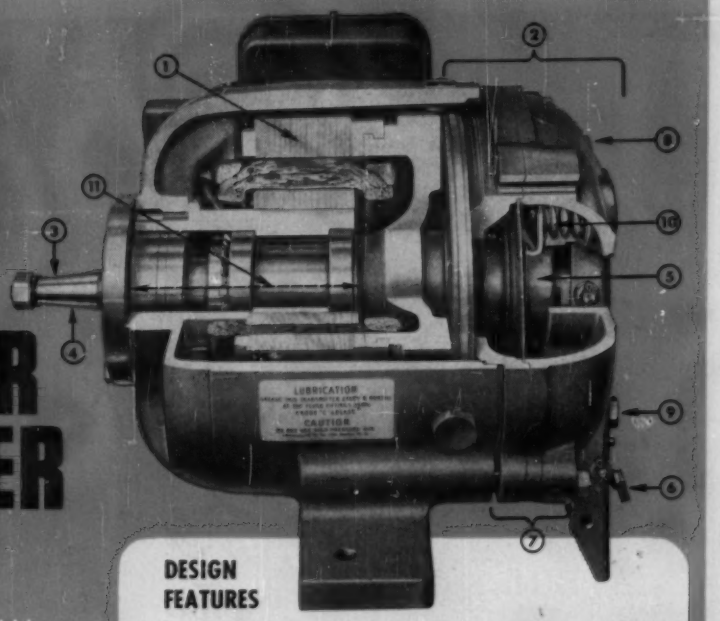
Here it is!

THE NEW DIEHL "BA" POWER TRANSMITTER

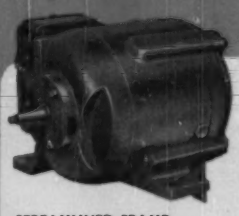
For Draper Looms

Exclusive new design features mean . . . *consistent* quality production . . . *peak* operating efficiency . . . minimum maintenance, labor and costs!



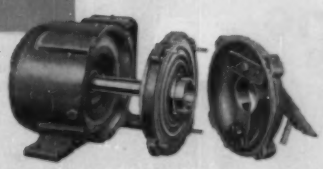
DESIGN FEATURES

*1. High inertia inverted motor provides "stored energy" for smooth, fast starts and positive picking (maximum inertia with minimum size) . . . prevents regeneration.

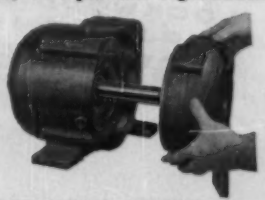


STREAMLINED FRAME
Easy to clean. Roomy terminal box.

KINETIC BRAKING ACTION
(See Feature 6)



CLUTCH-ACTUATING BEARING—A strikingly new and improved method of mounting. (See Feature 5)



CLUTCH-BRAKE ASSEMBLY—Improved, simplified. Readily removable as a unit. (See Feature 2)

plus these outstanding New Features

*2. **CLUTCH-BRAKE ASSEMBLY**—Improved and simplified for positive action and ease of adjustment. Removes readily as unit for maintenance, without disconnecting motor from loom frame.

3. **PINION**—Free accessibility for installation and maintenance.

4. **SHAFT**—Large diameter, alloy steel, heat treated—assures long life, eliminates need for outboard bearing.

*5. **CLUTCH-ACTUATING BEARING**—New diaphragm mounting for frictionless clutch action, positive radial rigidity of bearing . . . eliminates fretting corrosion . . . means full self-alignment of bearing for maximum life.

*6. **KINETIC BRAKING ACTION**—For rapid, accurate stops. Particularly desirable for center fork detection looms.

7. **CLUTCH AND BRAKE ADJUSTMENT**—Simple and convenient. Provides visible check on brake alignment.

*8. **CLUTCH-SETTING INDICATOR**—Built integral with unit for instantaneous external checking of clutch setting.

9. **SAFETY LATCH**—Built integral with unit. Prevents accidental engagement of clutch.

10. **CLUTCH-LOADING ASSEMBLY**—Internally located, hence tamper-proof.

11. **SHAFT-END BEARINGS**—Arrangement simplified and improved. Two ball bearings and an extra large roller bearing assure maximum life.

*Exclusive feature—patent protected.

The original and only loom power transmitter . . . plus many new and outstanding design and construction features never before incorporated in a loom drive!

Over 40,000 Diehl Power Transmitters have been in continuous operation on DRAPER LOOMS—*most of them more than six years!* The new "BA" Power Transmitter is even *more* compact, more streamlined, *more* efficient and *more* easily installed and serviced than its famous predecessor.

It's an inverted-type high inertia motor combined with a fast, positive clutch-brake mechanism. Note the exclusive new design features—the clutch-actuating bearing mounting . . . the kinetic braking action . . . the unitized clutch-brake assembly. These important advancements mean increased production . . . improved cloth quality . . . lowered operating costs . . . fewer shutdowns. *Write, wire or phone today for full information.*

Diehl

DIEHL MANUFACTURING COMPANY
Electrical Division of THE SINGER MANUFACTURING COMPANY
Finderne Plant, SOMERVILLE, NEW JERSEY

BALTIMORE • CHAMBLEE, GA. • CHARLOTTE, N. C. • CHICAGO • CINCINNATI • MILWAUKEE • NEEDHAM, MASS. • NEW YORK • PHILADELPHIA

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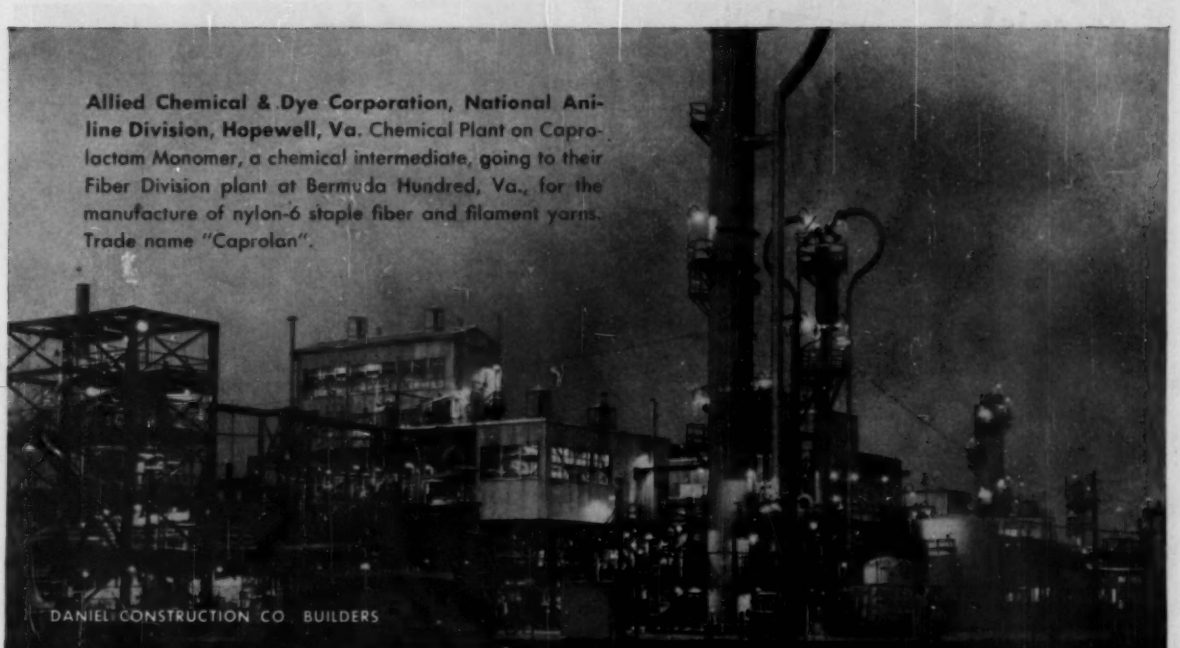

Allied Chemical & Dye Corporation, National Aniline Division, Hopewell, Va. Chemical Plant on Caprolactam Monomer, a chemical intermediate, going to their Fiber Division plant at Bermuda Hundred, Va., for the manufacture of nylon-6 staple fiber and filament yarns. Trade name "Caprolan".

DANIEL CONSTRUCTION CO. BUILDERS

LOCKWOOD GREENE PROJECTS IN . . . . . SYNTHETIC FIBERS

In designing and supervising the construction of many synthetic fiber plants, Lockwood Greene has gained recognition in the specialized engineering problems involved in this field, with such clients as —

North American Rayon Corporation (Div. of Beaunit Mills, Inc.)
Celanese Corporation of America, Rome, Georgia
American Enka Corporation, Enka, North Carolina
National Aniline Division, Allied Chemical and Dye Corporation
Hopewell and Chesterfield County, Virginia
National Rayon Corporation, Ltd., Bombay, India

Beaunit Mills, Inc. — 1 & — 2, Coosa Pines, Alabama

This plant was built in two units. Unit No. 1, first completed, has a capacity of 10 million pounds per year of viscose textile yarn. Unit No. 2, with a capacity of 36,000,000 pounds per year of viscose tire cord, was built more recently.

DANIEL CONSTRUCTION CO., BUILDERS

Continuous management services from site selection to plant completion.

LOCKWOOD GREENE ARCHITECTS — ENGINEERS

BOSTON 16, MASS. 316 Stuart Street
NEW YORK 17, N. Y. 41 East 42nd Street
SPARTANBURG, S. C. Montgomery Building

OVER A CENTURY OF INDUSTRIAL PLANT EXPERIENCE

BROCHURE AVAILABLE UPON REQUEST

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10 billion yards to dye...

so few men to do it!

Fewer than 5,000 chemists and dyers combine art, science and industry all in one to add the important appeal of color to our tremendous annual output of textiles.

The magnitude and complexity of the job emphasize the vital function of the dyestuff maker whose responsibility goes beyond the simple sale of color by the pound.

National meets this responsibility with a line of nearly a thousand dyestuffs. We anticipate your needs with stocks of dyes in current demand, nearby and ready for fast shipment.

Ten application service labs coast-to-coast handle match requests speedily. Our representatives are technically trained to render practical help with application problems in the mill.

Our Color Standardization Control Laboratory assures the uniformity of every shipment.

And our multimillion-dollar Buffalo Research and Engineering Center works constantly to improve application methods and develop better dyes.

When you buy dyestuffs from National Aniline you enlist vast technical resources and specialized experience that are extremely valuable—and included in the price you pay for dyestuffs! That's why it's always good business to do business with National.

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N. Y.

Boston Providence Charlotte Chicago San Francisco Los Angeles Portland, Ore. Greensboro Philadelphia Richmond Akron Atlanta Columbus, Ga. New Orleans Chattanooga Toronto

L. F. Dommerich & Co., Inc.

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271 MADISON AVENUE

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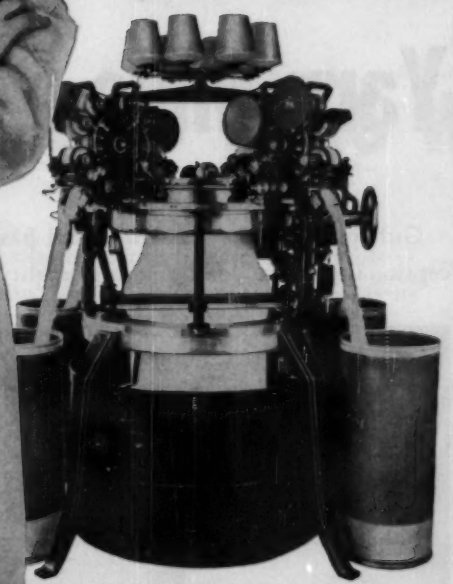
BUSINESS ESTABLISHED 1840

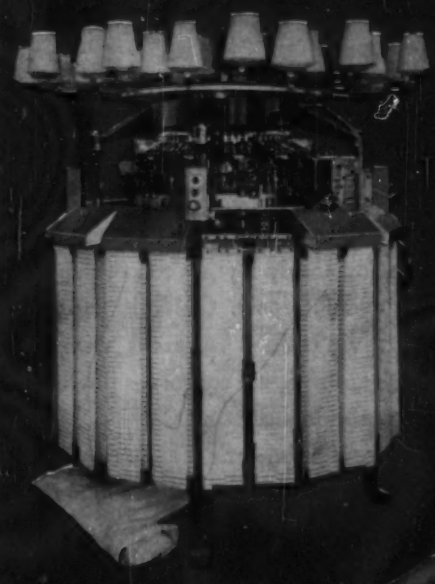
WILDMAN JACQUARD

Announces

A modern new plant comprising 124,000 square feet of manufacturing space for the production of Wildman-Jacquard Knitting Machinery. This complete line of knitting machines offered to the textile industry will be supported by improved service... repair parts... and delivery.



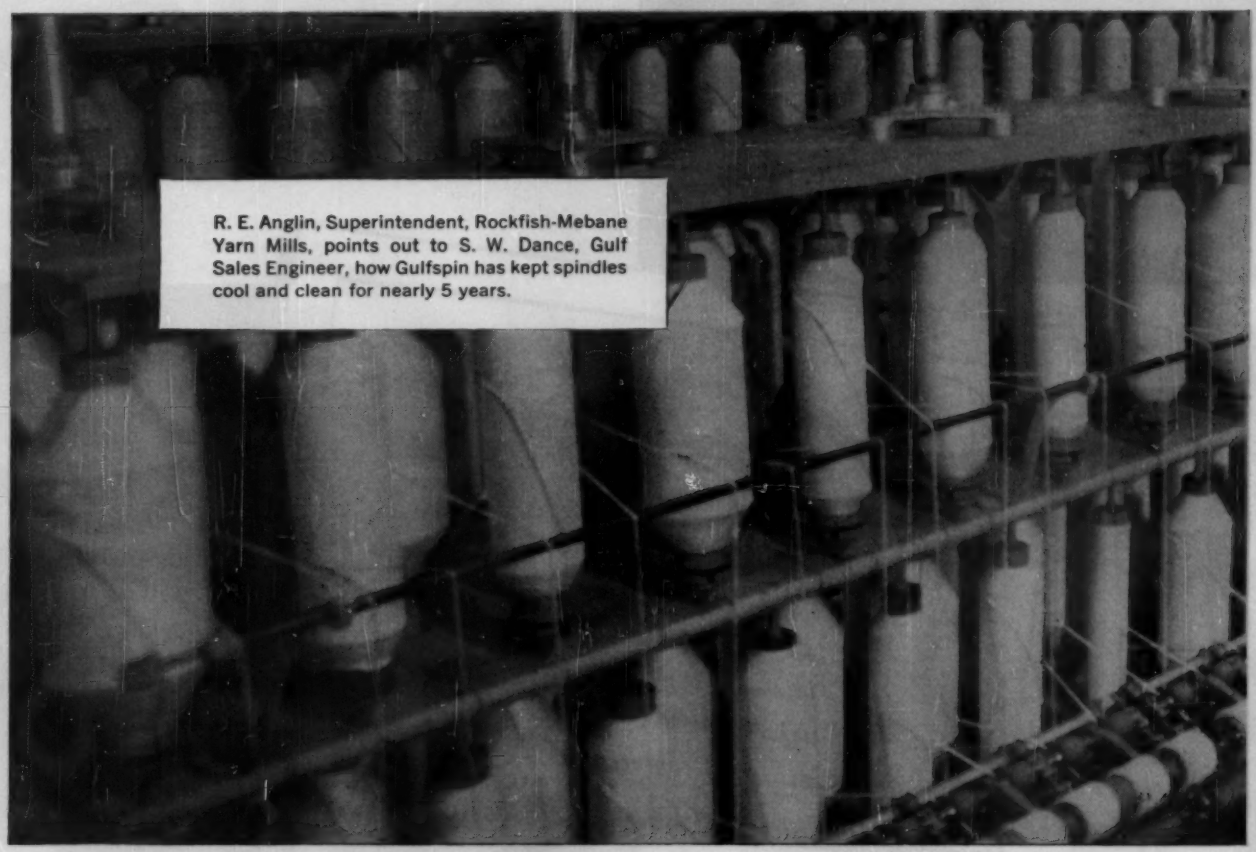
Pile Fabric Knitting Machine



TJI-12 Circular Jacquard

VILDMAN-JACQUARD CO.
210 Stanbridge Street
Norristown, Pennsylvania

A subsidiary of
DRAPER CORPORATION
Hopedale, Massachusetts



R. E. Anglin, Superintendent, Rockfish-Mebane Yarn Mills, points out to S. W. Dance, Gulf Sales Engineer, how Gulfspin has kept spindles cool and clean for nearly 5 years.

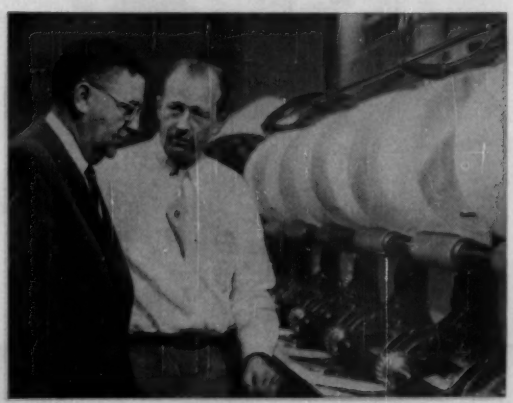
Rockfish-Mebane Yarn Mills cut

Rockfish-Mebane Yarn Mills have used Gulfspin for nearly 5 years to keep spindles performing efficiently. Gulfspin offers immediate savings in 3 different ways: cuts spindle cleaning costs; conserves power, and reduces maintenance costs.

Gulfspin minimizes the formation of sludge, gum and resin that make spindles stick. With Gulfspin, spindles stay clean. You save money on cleaning costs.

Gulfspin viscosity stays the same over long periods of time—8 years in one recently checked mill! Because viscosity doesn't increase, you drive your spindles without wasting power. This means substantial savings in power costs.

Gulfspin also prevents rust, and has exceptionally high load-carrying ability. It



Gulf Harmony Oil is highly resistant to oxidation, lasts indefinitely. It is the oil used to lubricate gears and bearings on this Saco-Lowell Comber.

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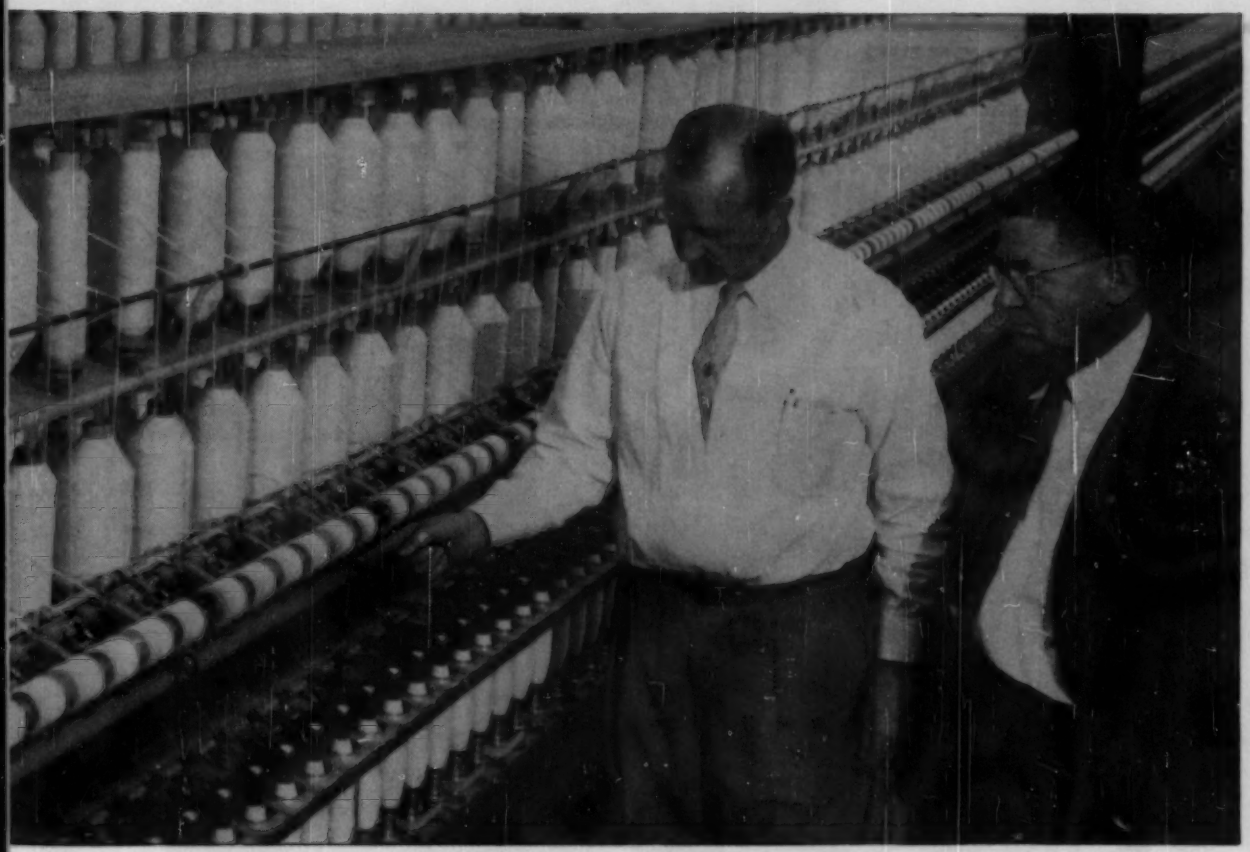

costs 3 ways with GULFSPIN

provides better protection against excessive wear. By using Gulfspin, you cut costs straight down the line.

Another great oil developed by Gulf and widely used at Rockfish-Mebane is Gulf Harmony. Gulf Harmony provides a tough lubricating film, resists oxidation, leaves no harmful deposits. Available in a wide range of viscosities.

For further information on either Gulfspin, Gulf Harmony Oil—or both—contact a Gulf Sales Engineer at your nearest Gulf office.

GULF OIL CORPORATION
GULF REFINING COMPANY
1822 Gulf Building
Pittsburgh 30, Pennsylvania

THE FINEST PETROLEUM PRODUCTS FOR ALL YOUR NEEDS

GULF

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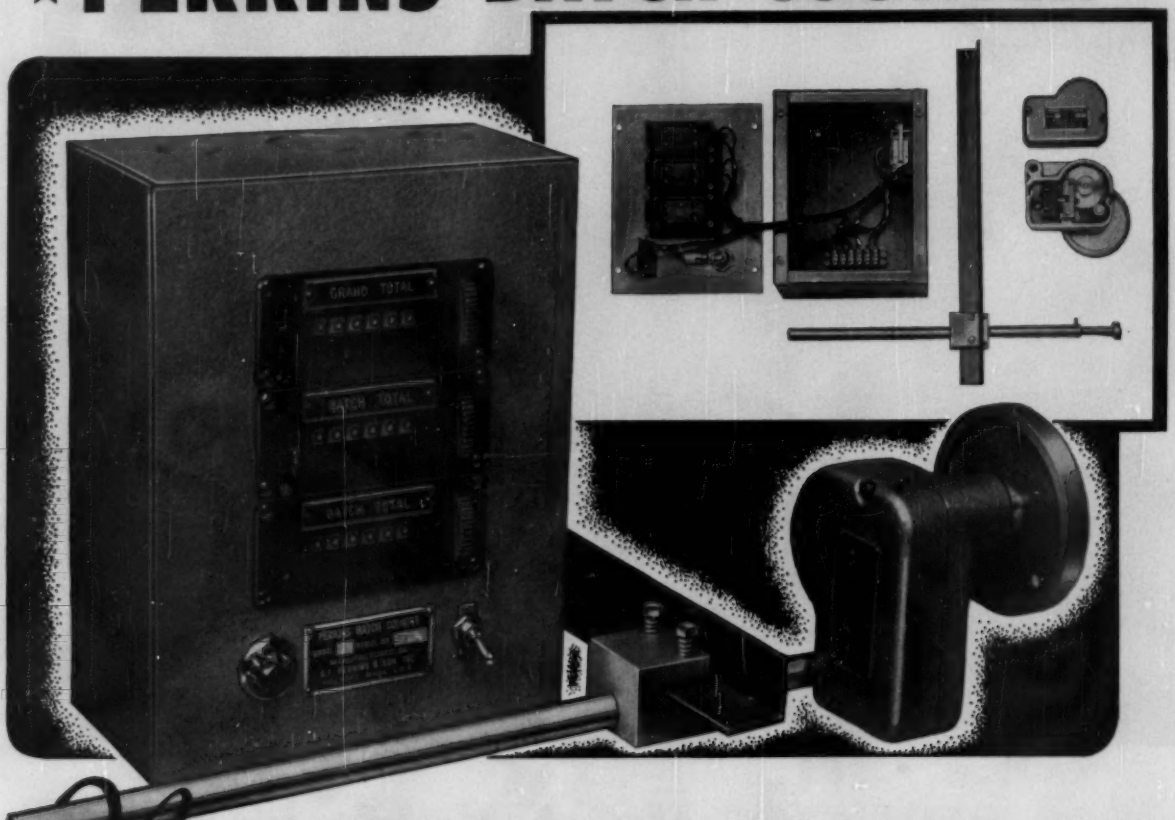
★ PERKINS BATCH COUNTER ★



New Versatile Electro-Mechanical Counter for Continuous Production Machinery ... *Eliminates human error*

Use it on your automatic winders. It registers the exact total yards in each batch and retains the total until the operator can record it. Each batch is measured from its exact beginning to its exact end. The total production for a day or shift is also registered. Use it for counting the pieces going into lots where the weight or the size of a container limits the lots. The action that separates the lots also separates the count. Each lot total is retained while the next lot is being counted. This versatile batch counter will count any kind of material, being separated into lots or batches, by an electric impulse.

B. F. PERKINS & SON, INC.
HOLYOKE, MASSACHUSETTS

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they never go yellow

Gelva KR emulsions for cottons and synthetics do not absorb chlorine, and cellulosics treated with KR's do not yellow or tender with chlorine bleaching.

Gelva KR's are polyvinyl acetate emulsions which meet an extremely wide range of application requirements and offer an excellent choice as to viscosity, particle size, flow characteristics, drying time, film-forming properties, and compounding stability.

Gelva KR's are made and sold only by Shawinigan Resins Corporation. Shawinigan pioneered the production of polyvinyl acetate resins in 1929 and evolved the Gelva KR emulsions in 1944. For continued progress in research, production and application of polyvinyl resins for the textile industry—look to Shawinigan. For full details write Shawinigan Resins Corporation, Department 4301, Springfield 1, Mass.

SALES OFFICES: ATLANTA CHICAGO LOS ANGELES
NEW YORK SAN FRANCISCO

GELVA® KR *emulsions for textiles*

SHAWINIGAN RESINS

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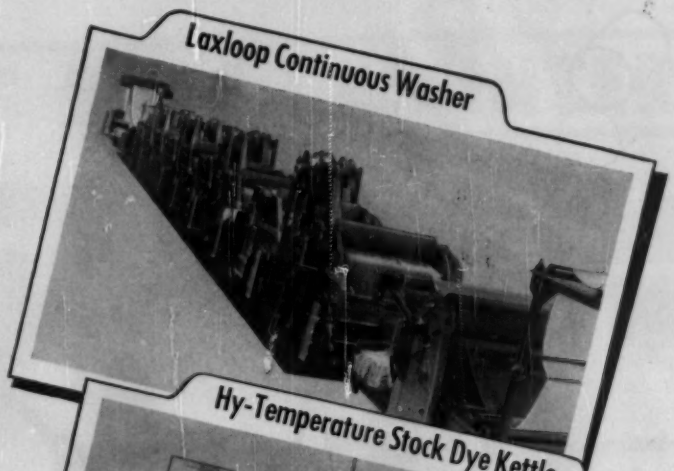
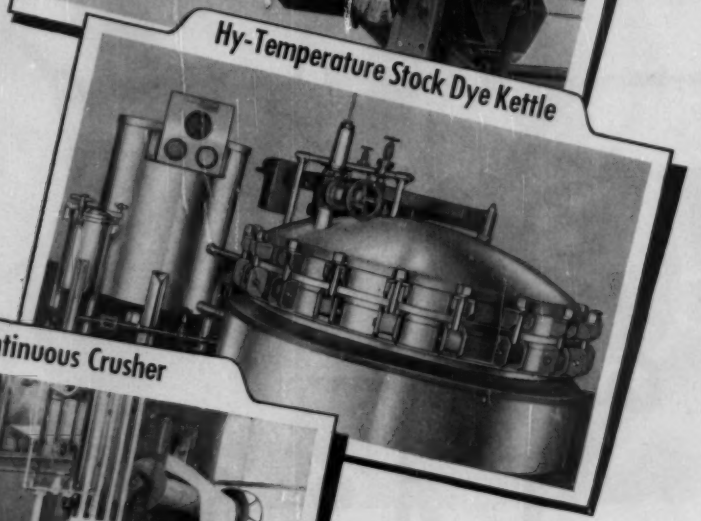
The Fleet Line

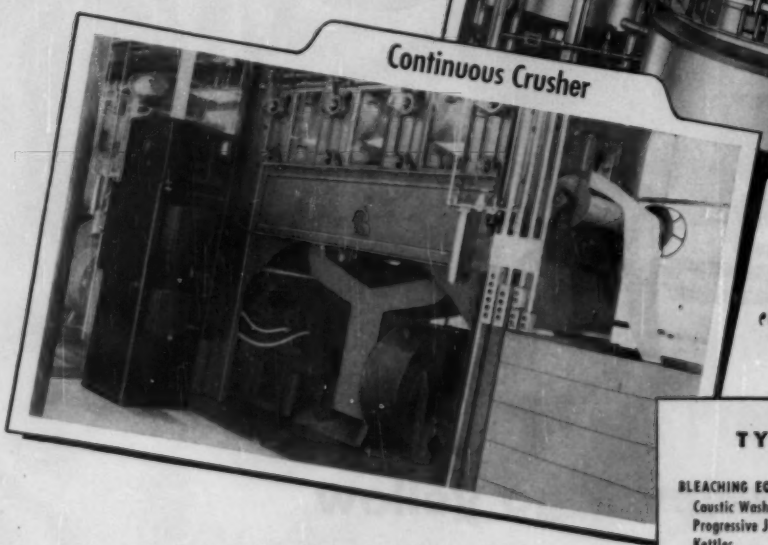
A COMPLETE LINE OF

MODERN EQUIPMENT

to handle successfully present-day Finishing, Carbonizing and Dyeing Requirements







Call in a Fleet Line "Engineers' Engineer"

If you have a problem, if your requirements have changed, if you want a new installation — consult an R&L "Engineers' Engineer". Bring us in at the planning stage for maximum efficiency — and we'll stand by all the way, until your installation is fully operative. Ask about performance records of practical R&L installations.

TYPES OF EQUIPMENT

BLEACHING EQUIPMENT
- Caustic Washers
- Progressive Jigs
- Kettles
- Tanks

CARBONIZING
- Cloth Carbonizing Ranges

CLEANERS
- Derby Continuous Dry Cleaners

COMPACTING MACHINES

CRUSHERS
- Continuous
- Semi-continuous

DYEING EQUIPMENT
- Dye Becks
- Dye Kettles
  - Pisco Dye Kettles
  - Rug Dye Kettles
  - Sample Dye Kettles
  - Stock Dye Kettles
    - Standard
    - Hy-Temperature
- Top Dyeing Machines

DRYERS
- Tenter

FULLING MILLS
- Cloth
- Endless Felt

LABORATORY MACHINES

PADDERS

PAILS

PARTS

POTEYES

PUSHER MILLS

REELS

ROLLS
- Miscellaneous
- Fulling Mill
  - Rubber Ring
  - Vulcanized Rubber
  - Wood Lagged
- WASHER,
  - Wood
  - Rubber
  - Stainless Steel

SHRINKPROOFING MACHINES

SOAPING
- Rope Soapers
- Soap Distributing Systems
- Soaping Machines,
  - Rope
  - Open Width

SPECIAL MACHINES

SQUEEZE ROLL

EXTRACTORS

TANKS
- Miscellaneous
- Size Mixing
- Storage

TRUCKS
- Cloth
- Dye
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WASHERS
- Cloth Washers, (Batch & Continuous)
- Open Width
- Dolly
- Felt Washers, Endless

WRINGERS

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RIGGS and LOMBARD Inc.

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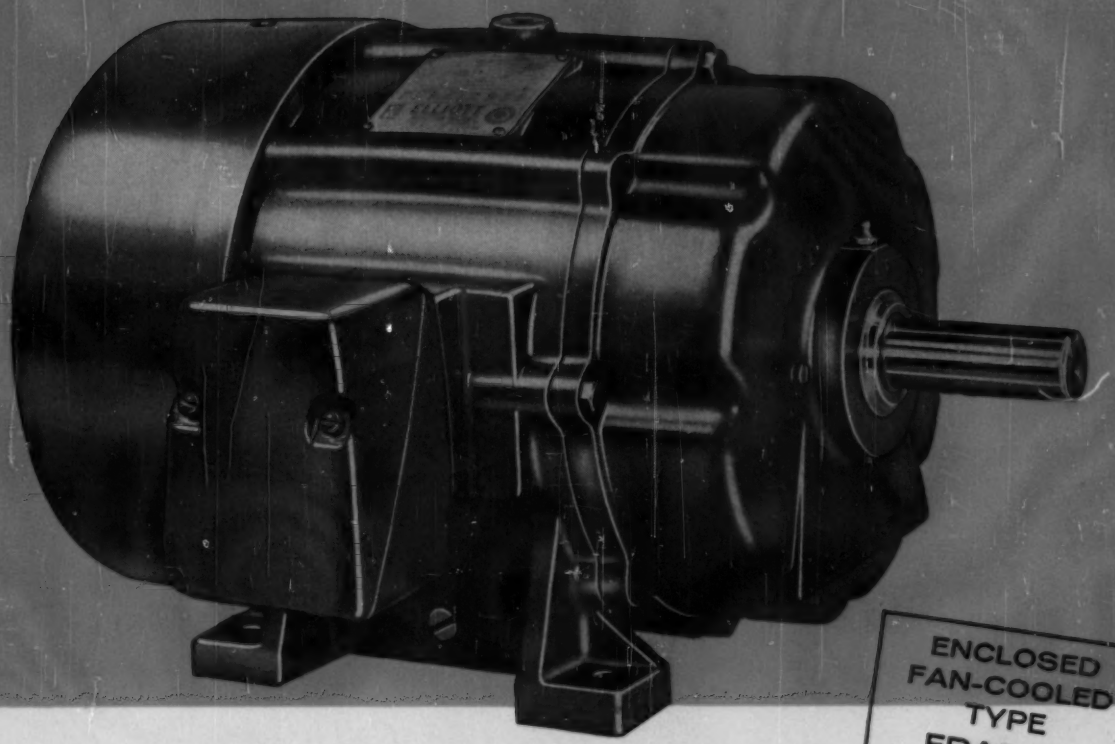
Inside and Outside . . . entirely new



ENCLOSED FAN-COOLED TYPE FRAMES 184-256U

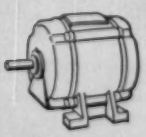
Elliott C-W Type N Motors

NEW PERFORMANCE! You get more horsepower per pound from these compact Elliott C-W motors because of their improved design, and the use of vastly superior insulating materials and electrical steels. Due to greater mechanical and dielectric strength, insulating materials occupy less space. More space is available for copper—the "muscle" of the motor.

NEW PROTECTION! Internal parts of Elliott C-W motors are completely protected by rugged housings—dripproof, or totally-enclosed, as required. Efficient fans assure ample cooling.

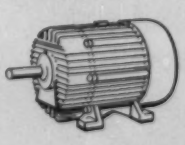
NEW DEPENDABILITY! New Elliott C-W type N motors are designed for the utmost in dependability. They will withstand physical abuse. Use of highly dependable insulating materials assures prolonged life; anti-friction bearings are available in several optional types, to meet severe service conditions.

OTHER C-W TYPE N MOTOR ENCLOSURES



Totally-enclosed non-ventilated

Dripproof Protected



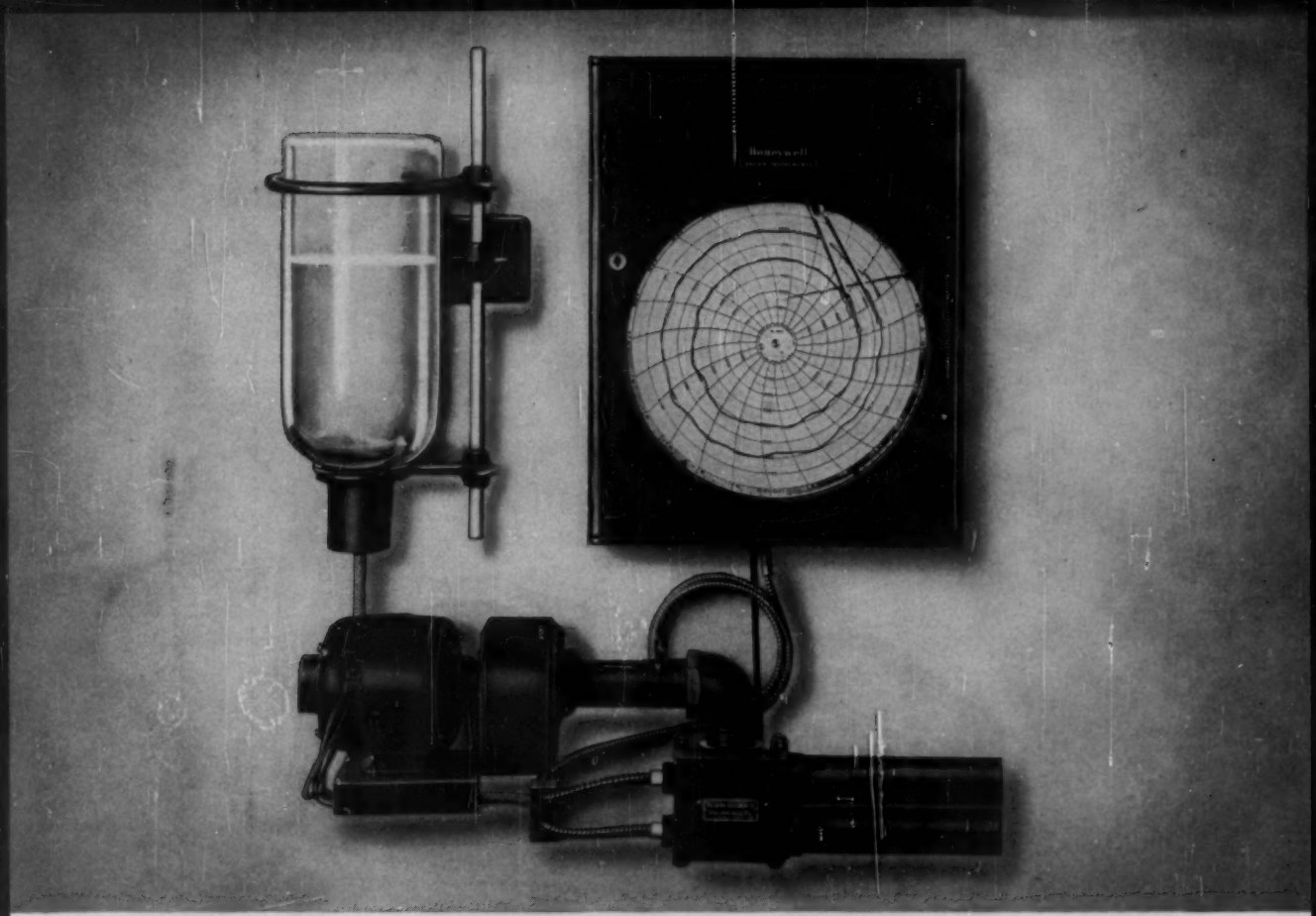
Totally-enclosed, fan-cooled (ribbed frame)

ELLIOTT Company

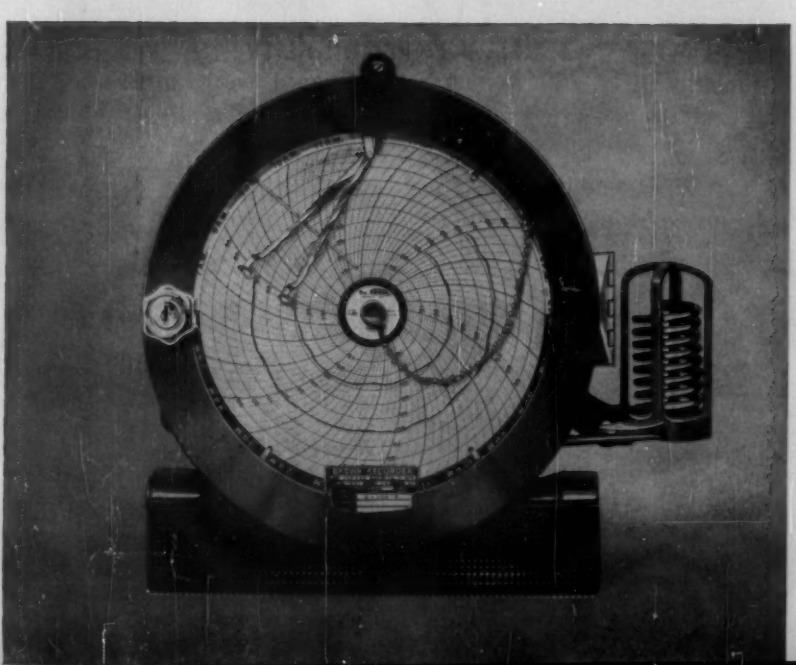
CROCKER-WHEELER DIVISION

WRITE for new bulletin describing Elliott C-W Type N Motors. Address: Elliott Company, Crocker-Wheeler Division, Jeannette, Pa.

W8-4



Your choice of Humidity



Especially suitable for spot checking and weave rooms . . .

Hair Hygrometer-Thermometer

- Hair element for direct humidity measurement
- One chart records humidity and temperature
- Spring wound or synchronous electric chart drive
- Rugged, lightweight, portable, low cost

Especially suitable for dryers and conditioning chambers . . .

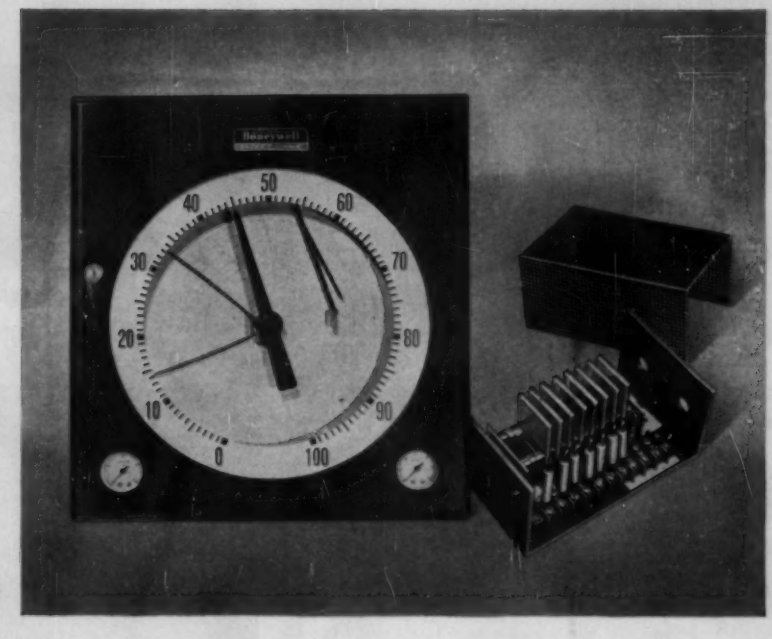
Wet and Dry Bulb Thermometer

- One instrument controls temperature and humidity
- Instrument can be located up to 200 feet from sensing element
- Useful in a wide range of temperatures, fast acting

Especially suitable for central control panels . . .

***ElectroniK* Humidity Systems**

- A variety of sensing elements: gold grid, resistance thermometers, thermocouples
- Extremely fast, accurate sensing and control
- Instrument can be located up to 1000 feet from sensing element
- Indicator or recorder—all forms of electric and pneumatic control
- Psychrometer or direct relative humidity reading available (depending on sensing element)



Measurement and Control...

with Honeywell Instrumentation

WHEREVER you need humidity measurement or control, there's a Honeywell instrument for the job. A wide selection of instrumentation assures an operating system that is exactly suited to your textile mill requirements. Call your nearby Honeywell sales engineer for a discussion of your application. He's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.—in Canada, Toronto 17, Ontario.

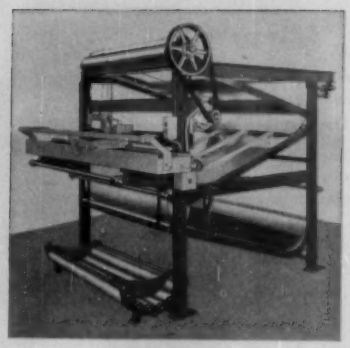
H HONEYWELL

MINNEAPOLIS **Honeywell**

BROWN INSTRUMENTS

First in Controls

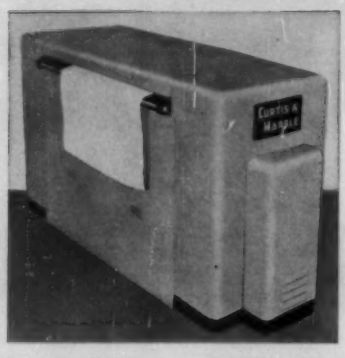
If you progress with the times, you must realize that the advantage of new machinery is judged today by the results it produces in the way of better quality at lower cost . . .



3 WAY SCRAY a space saver in a cotton finishing range

for cotton and synthetic goods

M-125 SHEAR



new brushing efficiency for cotton gray goods

M-125 BRUSHER

. . . rather than just a gross return on your investment. To help you better your competitive position in your cloth room is the endeavor of our development men who are ready and qualified to serve you.

CLOTH INSPECTOR with vertical light box for cottons and spun rayons

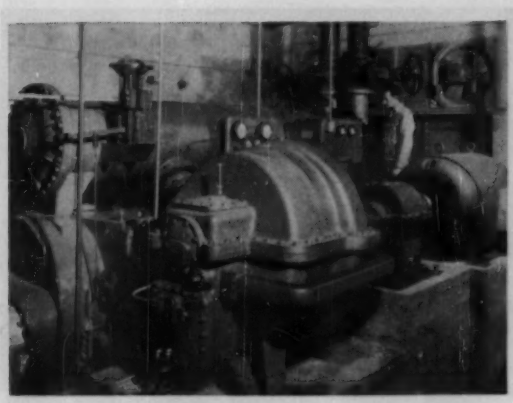
CURTIS & MARBLE MACHINE CO.

Serving the Textile Industry for more than 125 years

72 CAMBRIDGE STREET • WORCESTER 3 • MASSACHUSETTS

SOUTHERN SALES & SERVICE • SOUTH CAROLINA NATIONAL BANK BUILDING, GREENVILLE, S.C.

HARTSVILLE COTTON MILL REFRIGERATES WITH A CARRIER CENTRIFUGAL



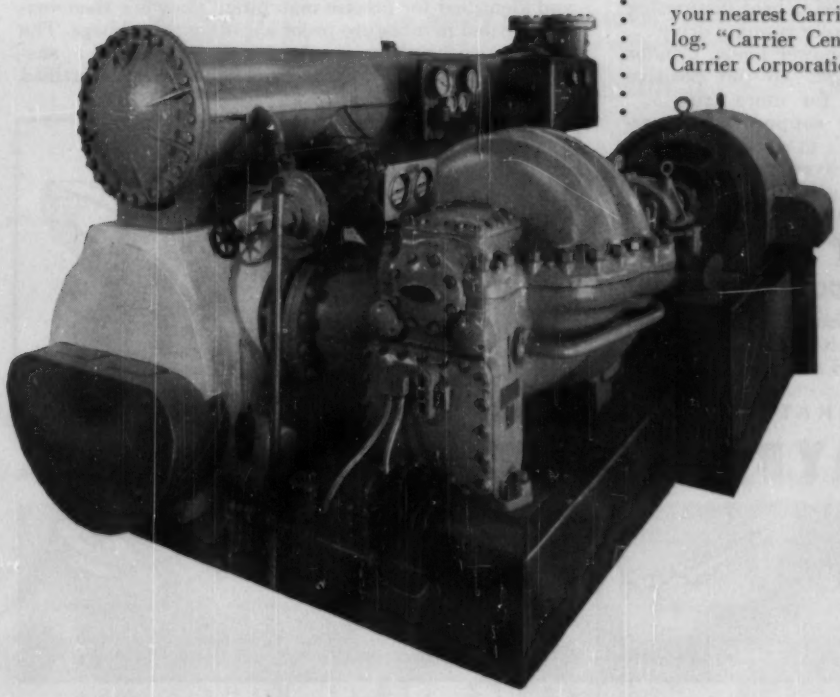
The most recent step in improving the control of temperature and humidity at the Hartsville Cotton Mill, Hartsville, South Carolina, is the addition of a new 560-ton Carrier Centrifugal Refrigerating Machine. Carrier has played an important part in the progress of this mill, which has also installed ten Carrier evaporative cooling systems and a 172-ton Carrier Reciprocating Refrigerating Machine.

Carrier Centrifugals serve dependably—often around the clock—in many mills, including Amerotron, Deering Milliken, Stonecutter, Greenwood.

Carrier developed the first centrifugal refrigerating machine in 1922. Carrier has built more of them—by far—than all other makers combined.

For unbeatable performance, why not insist on Carrier Centrifugal refrigeration for your mill? It can serve dependably as the heart of any air conditioning system. Carrier Centrifugals are available in many sizes, from 100 to 4000 tons cooling capacity.

Make use of our experience and assistance. Call your nearest Carrier office. Or write for our free catalog, "Carrier Centrifugal Refrigerating Machines." Carrier Corporation, Syracuse, New York.



Carrier

air conditioning

refrigeration

industrial heating

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HOW
CONDOR V-BELTS
give you "More Use per Dollar"
Structurally Balanced for Smooth Running
Straight Sidewalls More Grip, Longer Life

These Smoother Running V-Belts Lower Your Operating Costs

Condor V-Belt engineering makes the difference. The strength member is micro-positioned in heat dissipating rubber for a smoother running, cooler running drive . . . for longer life with the heaviest power loads. Condor V-Belt sidewalls are made *straight* to put positive pressure on the sheave grooves for more grip . . . less slip. Straight sidewalls help support the super-strength synthetic cords of the belt in a straight line so that *all* cords pull equally . . . deliver their maximum share of power. Controlled length is accomplished through prestretching during manufacture to remove inelastic stretch that might otherwise occur on the job.

NOW . . . Moisture-Proof Vacuum Packaging

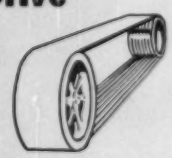
R/M's exclusive new vacuum sealed moisture-proof packaging assures positive V-belt length control for users of longer lengths in C, D & E cross sections! Belts are measured at the factory under controlled humidity and identified for precise matching. They are then vacuum-sealed in moisture-proof aluminum lined bags. The result—no shrinkage or elongation in storage . . . sustained uniformity on the drive! Length is certified from the factory to the field.

R/M Poly-V* Drive

A New Belt Drive Concept For Heavy-Duty Power Transmission. Eliminates V-belt matching problems. Delivers up to 50% more power in the same space as regular V-belts or equal power in less space.

Write for copy of Poly-V Drive Bulletin #6638.

(*Poly-V is a registered Raybestos-Manhattan trademark)



RM-606

MANHATTAN RUBBER DIVISION—PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.

Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Brake Linings • Brake Blocks • Clutch Facings Asbestos Textiles • Packings • Engineered Plastic, and Sintered Metal Products • Laundry Pads and Covers • Bowling Balls

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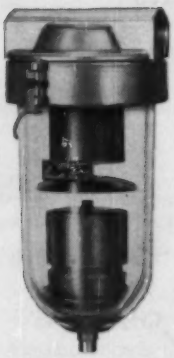
Good News Norgren

for design engineers and PLANT ENGINEERS

ANNOUNCES

Important New Developments in Compressed Air Filters and Pressure Regulators



NEW Norgren Air Line Filters

- **LESS PRESSURE DROP** — larger passages and larger filter element.
- **BETTER LIQUID REMOVAL** — Improved louver plate and baffle design. Removes more liquid from the compressed air line.
- **CHOICE OF FILTER ELEMENT**—interchangeable filter elements, 74, 64, or 25 micron.

NEW Norgren Pressure Regulators

- **GREATER ACCURACY OF REGULATED PRESSURE** — balanced valve and increased effective diaphragm area provide improved accuracy over a wide operating range.
- **RELIEVING OR NON-RELIEVING TYPE AVAILABLE**
- **IMPROVED RELIEVING CHARACTERISTICS** — automatic relief of excess pressure. Holds system pressure close to regulator setting.

For complete information...

call your nearby Norgren Representative listed in your telephone directory—or

WRITE THE FACTORY FOR NEW CATALOG.

C. A. NORGREN CO.

3404 SOUTH ELATI STREET • ENGLEWOOD, COLORADO

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Dow

In their brief but exciting history, chelating agents have encountered reactions ranging from scoffs and disbelief to overzealous exaggeration about their application. But the air is clearing. Already they are serving as important tools in many industrial processes. This is the beginning of a series on chelating agents designed to further clarify what they are, what they will do—and won't do.

The Chemistry of Chelation: Part I

Chelation defined · Example of the reaction · Variety of applications · Future of chelating agents

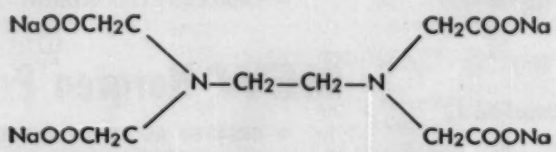
Polymerization of synthetic rubber controlled . . . soap kept white and sparkling on the dealer's shelf . . . textiles bleached and dyed with permanent uniform colors . . . pharmaceuticals stabilized. Unrelated reactions? Certainly. However, all are accomplished by a group of closely related chemicals called chelating agents. How do they work? Well, it's not magic, but chemistry—in a way, fairly basic chemistry. But let's begin at the beginning.

What Is Chelation?

Let's look at the word chelation. It is derived from the Greek word *Kelos* which means "claw." Simply stated, a chelate is a claw which holds a metallic ion inactive in solution. Chemically stated, chelation is a chemical reaction in which polyvalent metallic ions are reacted with organic reagents (chelating agents) to chemically inactivate these polyvalent metallic ions in the form of an extremely stable, water-soluble chelate.

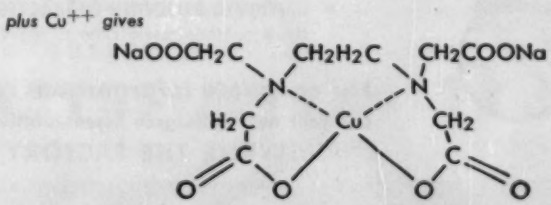
Typical Reaction

If we examine a typical reaction, the process of chelation becomes quite clear. Let us take, for example, the chemical structure of Versene®, one of the Dow chelating agents.



Versene

Now, if we place the Versene in a solution which contains free polyvalent ions of copper (Cu^{++}), the following is the result:



Versene Copper Chelate

The resultant compound is Versene copper chelate. The copper ion has become a member of an inner ring structure in the molecule. The result?

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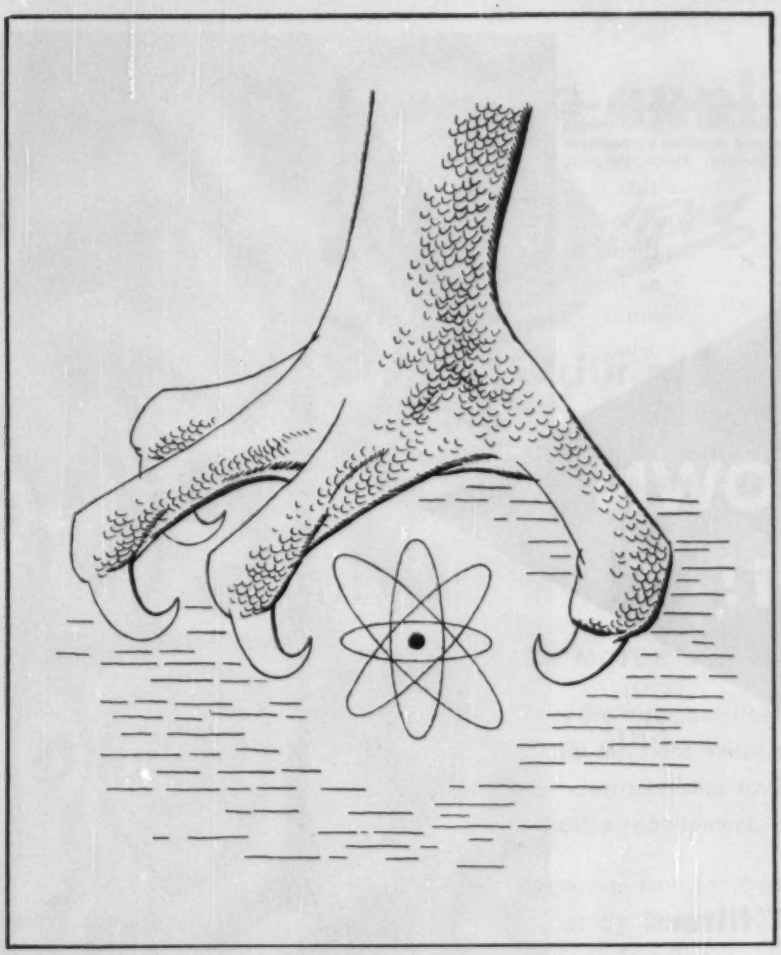

They can descale boilers, soften water and cure acute lead poisoning. The number of current industrial and medical applications is large, but the potential in unexplored areas is enormous.

And the Future?

The future of these products will hinge on the imagination and insight of chemists and engineers, of production men and purchasing agents, in nearly every industry. Wherever metal contamination poses a problem or wherever controlled introduction of metal ions is desirable, these chemicals warrant investigation.

Versene and other Dow chelating agents won't solve them all. Chelation is not a panacea. It will work chemically in some areas—it will fail in others. However, it is Dow's intention to assist in every way in the uncovering of processes in which chelating agents can be profitably used. Inquiries on your company letterhead will be handled with dispatch. We will be pleased to provide information and technical assistance. Write to Technical Service and Development, Dpt. CA 900B, THE DOW CHEMICAL COMPANY, Midland, Michigan.

It is inactivated. It cannot react with soap to cause darkening and stain during storage.

It can't cause breakdown of pharmaceuticals. It can't cause any trouble anywhere because it is locked in the Versene claw. It will stay locked in unless it is desired to reverse the process. This reverse action is used in polymerization of synthetic rubber—ions of iron being released at a predetermined rate by the chelate.

Variety of Applications

The most important thing, however, is that this "claw" property of chelating agents such as Versene makes it possible to solve a multitude of processing problems in industry. They've been used in tanning leather and tenderizing peas.

Additional topics in this series

PART II — The Versene and Versenol® series of Dow chelating agents (what they are, strength and stability features—Versenol lower cost, less strength). Also—how chelating agents are specified (product performance versus chemical composition).

PART III — Specific chelating agents for specific applications. Processing of textiles (strength and stability of Versene 100 for stabilization of hydrogen peroxide in bleaching ranges—Versene 100 strength and stability—Kier boiling; Versene S®, Versene T® for iron in presence of free caustic.

PART IV — Further discussion of the use of chelating agents in the processing of textiles (production economies possible—weak versus strong chelation depending on process and material—improvement in appearance and durability of fabric).

YOU CAN DEPEND ON DOW

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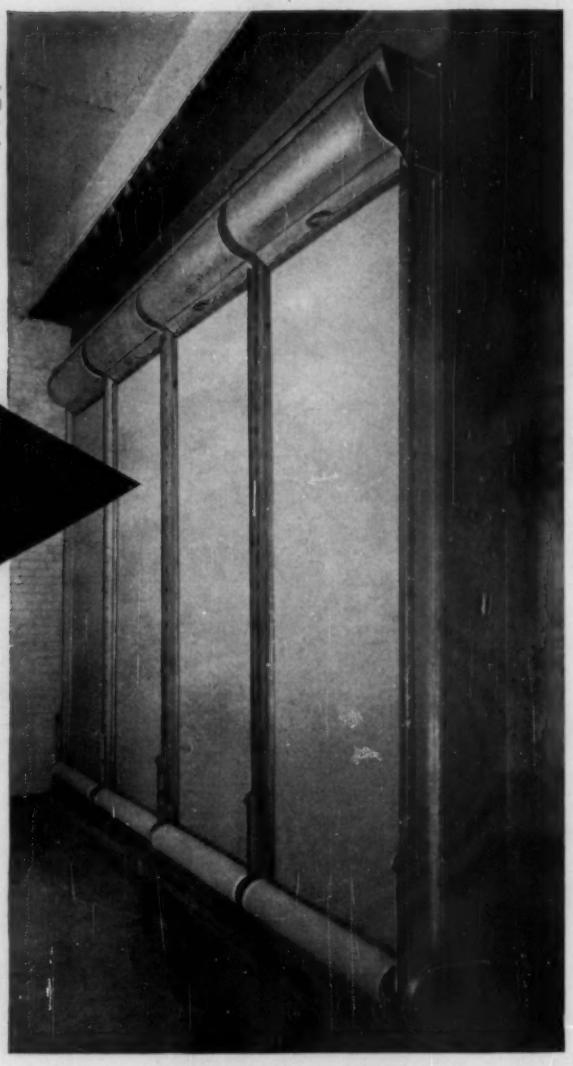


Auto-AIRMAT installation at Riverdale Mills, Enoree, South Carolina. Air conditioning system designed and installed by Buensod-Stacey, Inc., Charlotte, North Carolina.

CURTAIN GOING DOWN ...ON LINT!

AAF Auto-AIRMAT filters end lint problems for Riverdale Mills

Lint—the relentless enemy of textile operations—doesn't have a chance to do its dirty work at Riverdale Mills, Enoree, S. C. AAF Auto-AIRMAT filters on eight air conditioning systems (totaling 569,365 cfm) keep lint safely behind the "paper curtain".

The Auto-AIRMAT is the *only* filter designed specifically for lint. Airmat filtering material, unwinding from roll at top of unit, moves automatically down the face of the filter, collecting lint all the way—rewinds into easily-disposable roll at bottom.

If you've got a lint problem, investigate the *lint filter*—AAF's automatically renewing Auto-AIRMAT. Call your local AAF representative, or write direct for Bulletin 234.

AAF
herman nelson

American Air Filter
COMPANY, INC.

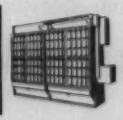
304 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

Herman Nelson Unit Blowers

Herman Nelson Propeller Fans

— BETTER AIR IS OUR BUSINESS —

Illinois Heating Specialties



Air Filters and Precipitators

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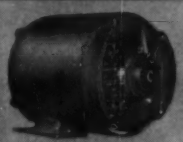
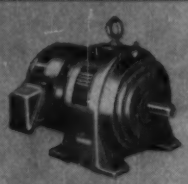
for your textile applications

TEXTILE MOTORS—1½ to 15 H.P. Specially engineered with wide open air passages... built-in high capacity fan expels clogging lint while forcing cooling air across motor surface. Send for Bulletin 14-193P1.

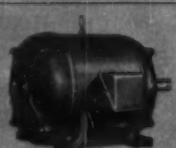
SELECTIVE SPEED DRIVES—1 to 150 H.P. For warpers, slashers; for range drives in finishing plants. Operate from A.C.; respond to changes in operations and automatically adjust speed to fit the job. Broad range of stepless speed control; respond to wide variety of remote control devices. Send for Bulletin 11-1P1.



DRIP PROOF, FULLY PROTECTED FRACTIONAL H.P.—1/20 to ¾ H.P. AC, single or polyphase. Send for Bulletin 1-1P1.



GEAR MOTORS—1 to 125 H.P. (parallel); ⅛ to 3 H.P. (right angle), A.C. or D.C.; speed to fit your need. Send for Bulletin.



RIGID BASE, OPEN TYPE, PROTECTED—1 to 400 H.P.; A.C., single or polyphase; for use in finishing, bleaching and dyeing plants, and print works. Send for Bulletin 6-1P1.

Performance-Rated© MOTORS 1/20 to 400 H. P.

Century **MOTORS ARE Performance-Rated**©

to specific mill equipment requirements

pickers • roving frames • spinning and twisting frames • cone winders • warp mercerizers .. agitators • dryers • mixers compressors • pumps • and other equipment

EACH MOTOR IS RIGHT FOR ITS JOB BECAUSE . . .

Century Performance-Rating enables you to select precisely the right motor size, speed, frame, and torque characteristics to fit each specific application requirement.

Mail coupon now for free Bulletins . . . or call or write your nearby Century District Sales Office or Authorized Distributor.

To CENTURY ELECTRIC COMPANY
1806 Pine Street, St. Louis 3, Mo.
Please send me the following bulletins:

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Name.....*Title*.....

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CENTURY ELECTRIC COMPANY

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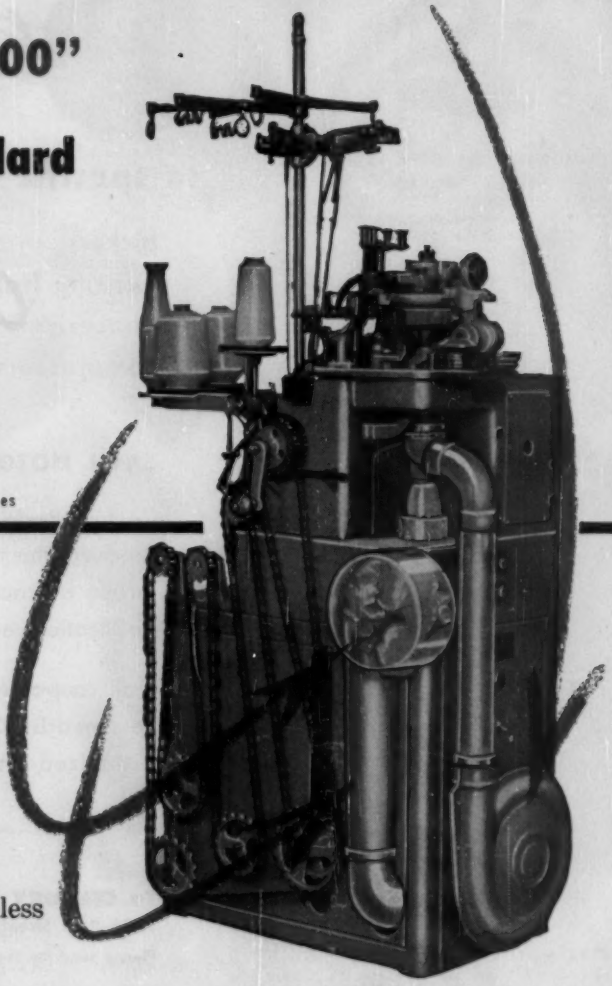
THIS NEW AUTOMATIC TENSION DEVICE*

on the FIDELITY "400" Sets the New Standard in Seamfree Stocking Quality!

*Patents Pending in United States and all Foreign Countries



Compare the unique features of the revolutionary new Fidelity Automatic Tension Device:

- Installation *does not* increase machine height!
- Completely air-operated— no mechanical arms or contrivances!
- Uniform tension is maintained regardless of knitting speed!
- Requires no resetting if machine is hand racked!
- Nylon retainer on transparent receptacle assures no-snag removal of stockings!
- Totally self-contained unit—easily installed without auxiliary air inlets!

Compare—then decide to meet the *new* standard of production quality *now*, with the superior new Fidelity Automatic Tension Device . . . designed for use with the electronically controlled Fidelity "400" and other makes of knitting machines. Write today for details . . . or visit our showrooms.

Designers and Builders of Intricate, Automatic Precision Machines

SINCE 1911

FIDELITY MACHINE COMPANY, INC.

3908-18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.

EXPORT DEPT.: 25 BEAVER STREET, NEW YORK 4, N.Y.

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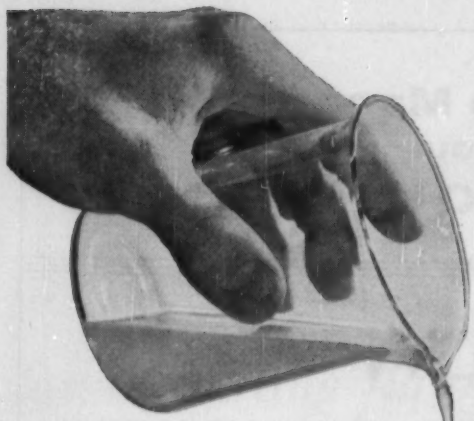
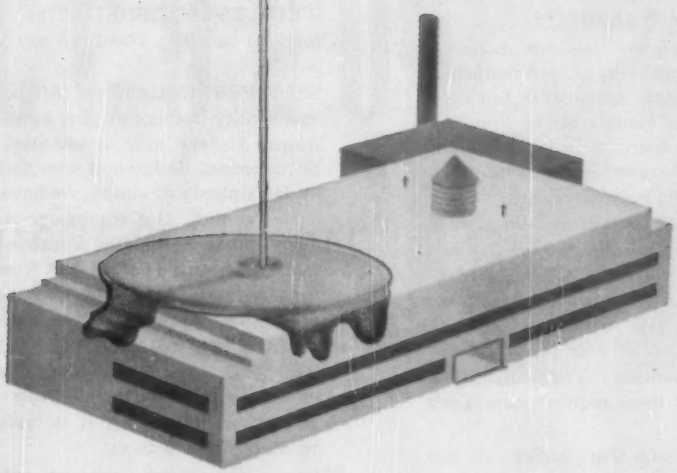


If you use water in your process...

USE EMULSIFIABLE A-C* Polyethylene



for the first time . . .
a polyethylene that is emulsifiable in water!

If water is your processing medium . . . if you use water in any stage of your operations . . . you should try emulsifiable A-C POLYETHYLENE.

With low-molecular-weight A-C POLYETHYLENE, you can prepare fine particle size, stable, clear emulsions which may be applied with any equipment now employing water systems.

Emulsifiable A-C POLYETHYLENE is now available in quantity for commercial trials. If you will write us on your business letterhead indicating your intended use, we will send you literature or such information as you may require.

SEMET-SOLVAY PETROCHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
Room 5382 • 40 Rector Street, New York 6, N. Y.
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Allied Chemical

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A&G

A Message to Management about DRYING EQUIPMENT

No. 8 in a Series

DEPENDABILITY

The purpose of this series is to discuss certain "signposts" which, if heeded, will lead management to the best in drying equipment. The best in drying equipment is obviously vital to management, because it protects value added by manufacture. "Signposts" which we have discussed previously include reputation, achievements, specialization, etc. This message is concerned with *dependability*.

WHAT IS DEPENDABILITY?

"Dependability" immediately suggests honesty, ability and a sense of responsibility. These characteristics may make an individual dependable, but they do not necessarily make a manufacturing company dependable. In addition the company must be well established, so it will be here "to-morrow" to make repairs, furnish parts, adjust complaints, etc. It must also be a self perpetuating *organization*, for similar reasons — not a collection of individuals who will scatter to the four winds when the "guiding genius" steps out. And finally it must be financially strong, so it can make good on just claims and conduct research which may not "pay off" for years.

When we say that this company is dependable, we mean that it fulfills all of these requirements. Let's see how and why we do.

1. HONESTY. We believe that "honesty is the best policy". We are not unique in this respect, but our *conception* of honesty goes beyond mere veracity. We feel a moral obligation to give the best possible value for money received — to recommend what the customer *needs* not that which will give us a price advantage.
2. ABILITY. All of the previous "messages" in this series give evidence of our ability, so we need not belabor the point here. Suffice it to say that some of the largest textile companies would not have standardized on our equipment if our ability were not proven.
3. SENSE OF RESPONSIBILITY. Please refer to "HONESTY" for part of the answer. Beyond that we have always seen to it that our equipment is operating properly before we consider the sale completed.
4. WELL ESTABLISHED. This company was founded in 1920. Need we say more on this point?
5. SELF PERPETUATING. All positions of responsibility in this company have understudies, trained to take over as required — including management, design and manufacturing. While we have plenty of ability, we have no indispensable "genius". Our equipment is produced by many minds working as a team. And now that we have become a part of J. O. Ross Engineering Corporation, a much bigger company than ourselves, our future is doubly assured.
6. FINANCIAL STRENGTH. Before merging with J. O. Ross Engineering Corporation our credit rating was "high". Now our financial strength is multiplied. It is "safer" than ever to do business with us.

We hope you are convinced not only that A & G Dryers and Ventilating Equipment are "dependable", but also that our *company* is "dependable". Both are equally important. If we have not had the opportunity to prove it to *you*, we ask for that opportunity now.

NOTE: A reprint of this and other "messages" will be mailed to you upon receipt of your name and title on your company letterhead.

A & G SLACK DRYER Designed to handle fabrics where no warp or filling tension is permissible yet a certain amount of agitation desirable. Result — maximum shrinkage, lack of shine and full hand.

ANDREWS and GOODRICH DIVISION
J. O. Ross Engineering Corporation
336 Adams Street, Boston (Dorchester), Mass.
Southern Representatives: McSpadden & Scantland, Charlotte, N. C.

*largest-selling liquid detergent**
in the textile industry...

NACCONOL® SL

...because it helps ease
the pinch on profits!

When profit margins are tight, production costs must be watched. That's why so many economy-minded textile mills use Nacconol SL.

They have found that Nacconol SL gives more cleaning power per dollar, as compared with most dry products on the basis of active-ingredients.

Liquid Nacconol SL cuts handling time and costs, too. It's cleaner and easier to use. Nacconol SL needs no dissolving. You simply add water to make the required working concentration.

Other popular forms of Nacconol for wet processing include Nacconol DB, Nacconol NR and Nacconol NRSF. Contact the nearest office for prices, samples and technical help.

*Alkyl Aryl Sulfonate

Nacconol

NATIONAL ANILINE DIVISION
ALLIED CHEMICAL & DYE CORPORATION

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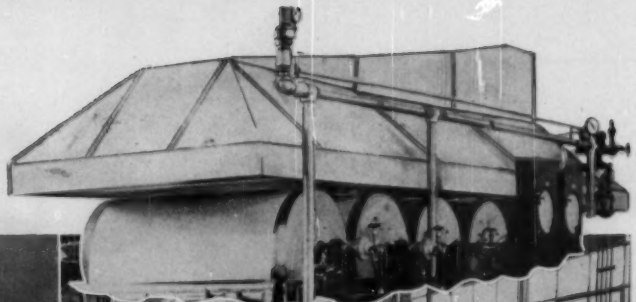
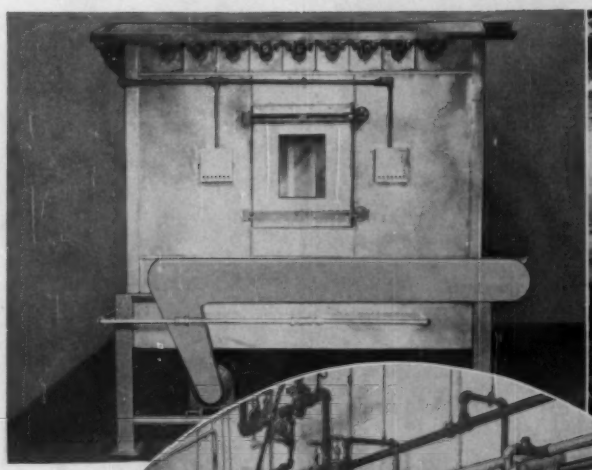
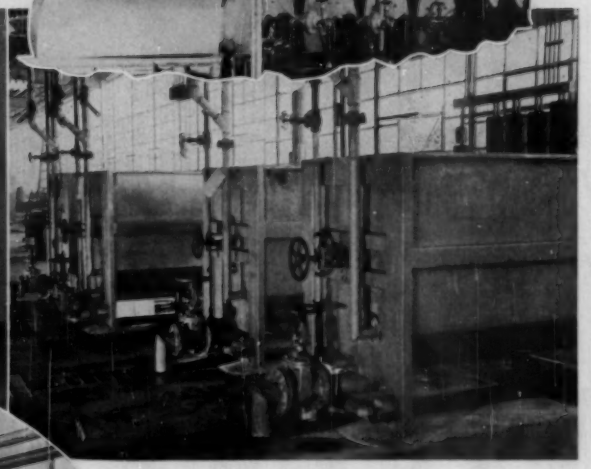
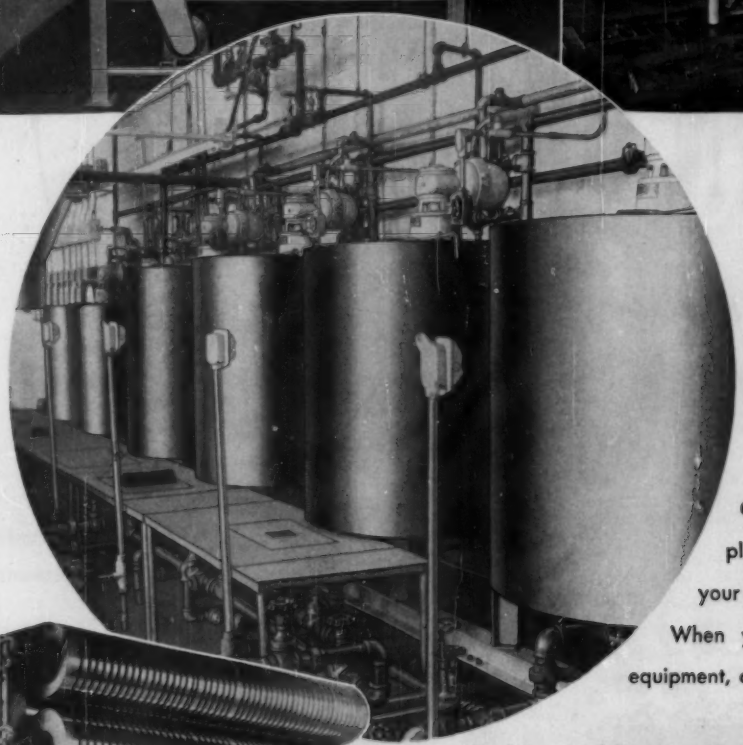
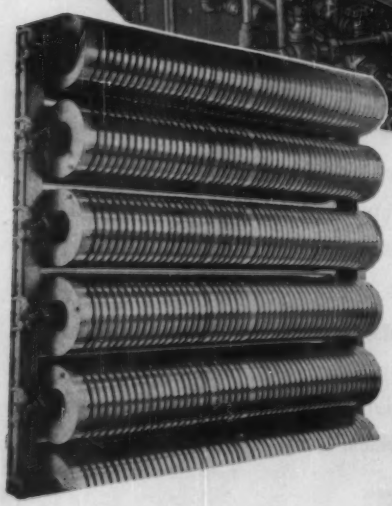
Cocker Engineers and Builds











the Finest in Stainless Steel Equipment

Cocker's new, modern stainless steel plant, plus 40 years of engineering know-how, is your best guarantee of quality and efficiency. When you need any type of stainless steel equipment, always call on Cocker.

Cooking and Storage Kettles
Cloth Dye Boxes
Drying Ranges
Cylinders of all Types
Size Boxes
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Special Equipment

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THE LEADER AROUND THE WORLD
COCKER Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

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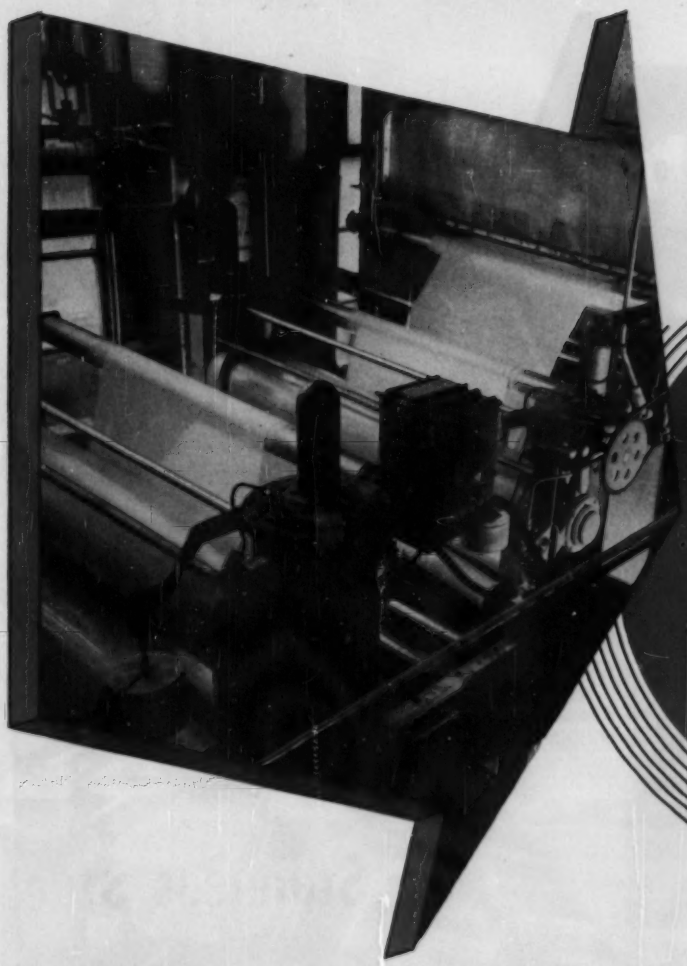

Built by Cook-P & N Machine Co., Inc. for Dominion Textile Co. Ltd. this new open width bleaching range handles cloth up to 60" wide, at speeds from 75 to 150 yards per minute.

33 STOWE-WOODWARD ROLLS

GUARD THE QUALITY OF 9 MILES OF CLOTH IN THIS BLEACHING RANGE

Because anything less than the best rubber roll performance could result in the loss of up to 9 miles of cloth in this open width bleaching range; 33 Stowe-Woodward rolls were specified by its builder, Cook-P & N Machine Co., Inc.

Designed and built for Dominion Textile Co. Ltd., the machine has been highly successful in producing quality bleached goods with materials ranging from heavy twills and poplin to broadcloth.

Wherever rubber roll performance is critical . . . and it is in almost any finishing operation . . .

. . . specify rubber rolls by Stowe-Woodward.

"RUBBER ROLLS with a REPUTATION"

S-W INC.

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN • NEWTON 64, MASS. • GRIFFIN, GEORGIA

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It's as simple as this... WHITIN

In top-flight quality mills, high production mills and specialty mills, on every fiber, Whitin Roving frames are acknowledged leaders.

This distinct mill preference is based on a solid record of unbeatable production, evenness of roving produced, the flexibility and performance of Whitin drafting systems. Advanced in design and having every desirable mechanical improvement, these frames have set new high standards of operation, with lowest costs per pound for direct labor, maintenance and total cost.

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ROVING FRAMES

give you Better Roving at Lower Cost

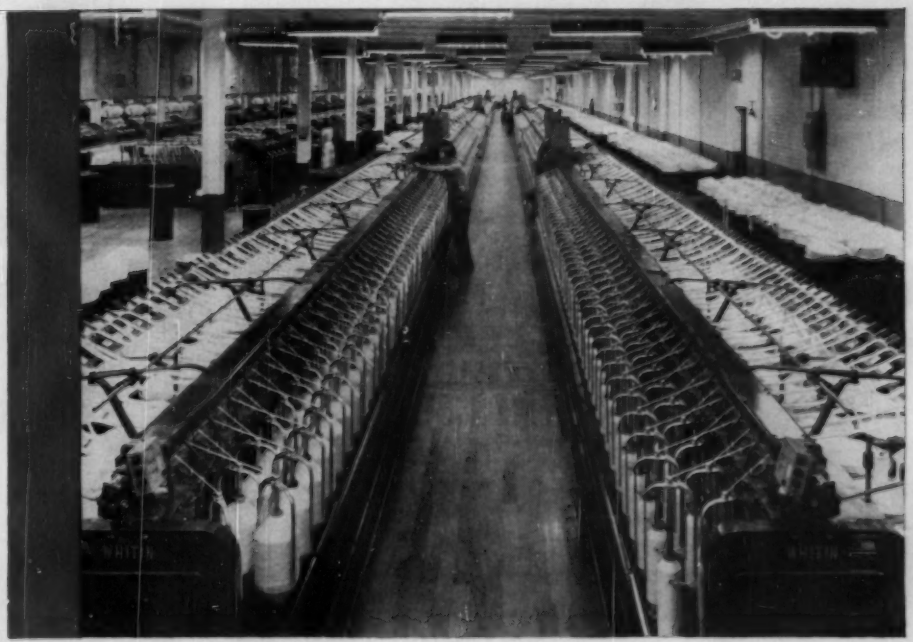
The data below is an example of the production and cost advantages you can secure with Whitin Roving frames. The figures are based on actual operating conditions in a mill producing 162,000 lbs. per 144 hr. week of 80x80, 39" 4.00 high quality print cloth with 31's warp and 41's filling.

	For 31's Warp	For 41's Filling
Hank Roving	1.00	1.30
Spindle R. P. M.	725	725
Front Roll Speed	178	139
T. Multiplier	1.15	1.30
% Efficiency	88	88
Lbs./Spdle./Hr.	1.10	.660
Lbs./Spdle./144 Hrs.	158.4	95.0
Size of Bobbin	12"x6½"	12"x6½"

	For 31's Warp	For 41's Filling
Wt./Roving/Bobbin	54 oz.	54 oz.
Spindles per frame	96	96

Spindles Required	1279
Spindles, 14 frames used	1344
Fr./Operator	5-5-4

Cost per lb. for direct labor . . . $.00391



Photos courtesy of
DUNDEE MILLS, Incorporated
Griffin, Georgia

For complete information, ask your Whitin representative — or write direct to us.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

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RODNEY HUNT TEXTILE WET FINISHING MACHINERY

A LONG-TERM INVESTMENT IN SOUND ENGINEERING AND SKILLFUL STAINLESS STEEL FABRICATION

For more than a century, Rodney Hunt machines have helped the textile industry maintain high production and quality at a profit. Licensed under both Becco and DuPont patents, Rodney Hunt maintains a continuing program of research and development in collaboration with these and other companies to give the textile industry the benefit of the most modern processes and equipment.

DYEING

Dye Pads • Niptrol® Dye Pads
Agers • Pad Steam Dye Ranges
Tensitrol® Steamers
Tru-Shade® Combination Washing and Dyeing Kettles
Tru-Shade Sample Dye Kettles
Tru-Shade Dye Becks and Kettles
Carpet Dyeing Machines

BLEACHING

Bleaching Rangettes* (Becco & DuPont)
Bleaching Ranges (rope or open width)
Agers • Desize Ranges
J-Boxes (Becco & DuPont)
Saturators (rope or open width)
Standard Open Width Washers
Tensitrol Steamers
Tensitrol Washers (rope and open width)

WASHING

Standard Open Width Washers
Tensitrol Washers (rope and open width)
Slack Loop® Washers
Endless Felt Washers
Tru-Shade Combination Washers and Dyeing Kettles
Yankee Clipper® Washers
Tru-Shade Scouring Machines

FINISHING

Scutchers • Extractors
Niptrol Mangles • Tensitrol Steamers
Wring-Master® Squeeze Rolls

AUXILIARIES

Batchers
Compensators (rack or swing type)
Draw Reels • Entering Equipment
Folders • Scutchers
Poteyes • Roller Poteye Guides
Reels: round, hump, triangular, oval
Rolls: wood, metal, rubber, plastic, tube cast, chrome plated, special design
Tension Bars
Whirlwind® Sample Dryers
Special Machines
Latex Backing Machines
Stainless Steel Tanks
Wring-Master Squeezers

SEND FOR LITERATURE

Catalog No. 103
Bleaching ranges, Rangettes, Washers and Saturators. Illustrations, specifications and schematic drawings.

Bulletin No. 54
Niptrol Mangle

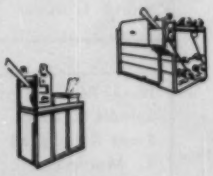
Bulletin No. 44
Textile Wet Finishing Equipment

Catalog No. 849
Tensitrol Washers. Detailed description of this unique washer and specifications.

*Trademark

Niptrol Mangle

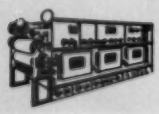
Tru-Shade Dye Beck



Bleaching Ranges and Rangettes

Tensitrol Washer

Tru-Shade Carpet Dyeing Machine



Tensitrol Steamer

Shaf-Tite® Rolls and Reels

RODNEY HUNT MACHINE CO.
66 Mill St., Orange, Mass., U.S.A., Tel.: Kingsdale 4-2511

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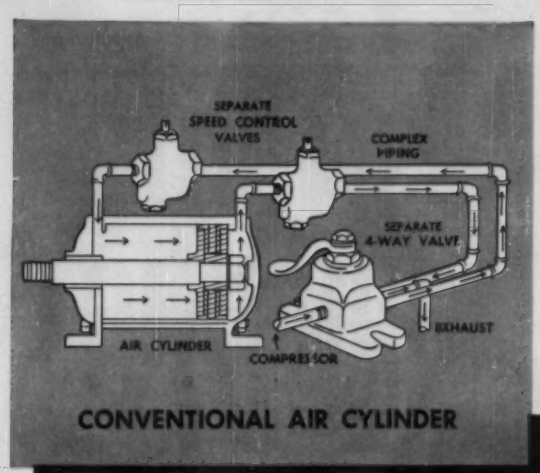


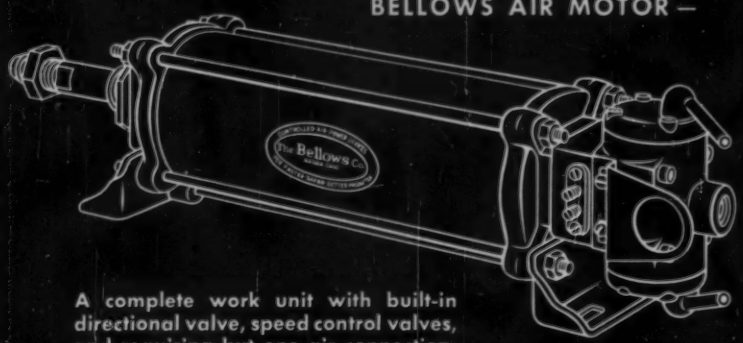
CONVENTIONAL AIR CYLINDER

ONE LOOK

and you can see the

SAVINGS

THE COMPACT, STREAMLINED BELLOWS AIR MOTOR—



A complete work unit with built-in directional valve, speed control valves, and requiring but one air connection.

Design engineers looking for simplicity and economy in air circuit installations will find a quick answer in the two circuits sketched in this ad. One shows a conventional air circuit with separate air cylinder, separate speed control valves, separate directional valve and the piping required to install the circuit. The other shows the Bellows Air Motor—the complete air cylinder package—with directional valve and speed control valves built in, and its single air connection.

But simplification of design and installation problems is actually one of the less important advantages this compact power unit offers. The big advantages are precision control and improved performance. Response is lightning fast; action is smooth and positive. And coupled with improved performance is minimum maintenance —less time out for servicing.

The Bellows Air Motor offers you a choice of *built-in* directional valves: 8v or 110v electrical control, explosion-proof electrical control, manual control, or pilot valve control—in five bore sizes: 1″, 1¾″, 2½″, 3⅝″ and 4½″, and in any stroke length.

This new four-color, 24-page bulletin gives full technical data on Bellows Air Motors.

It is free on request. Ask for BM-25. Write Dept. TW-157, The Bellows Co., Akron 9, Ohio. In Canada, Bellows Pneumatic Devices of Canada, Ltd., Toronto.

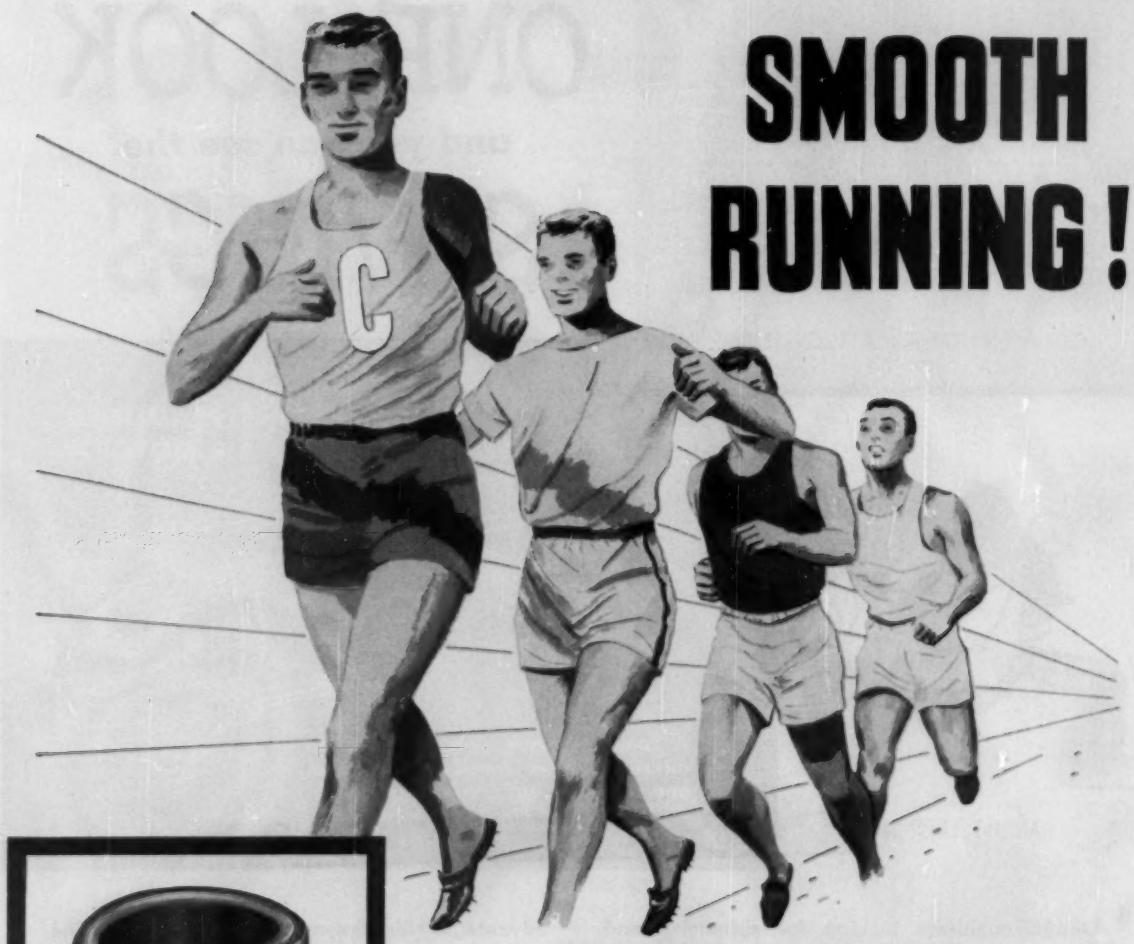
The Bellows Co.

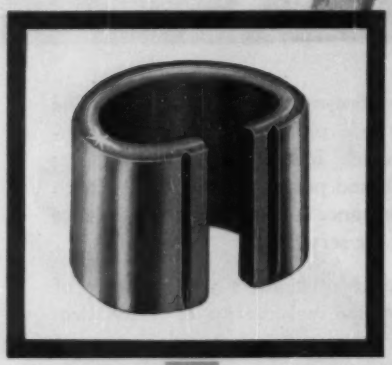
AKRON 9, OHIO

137PA

FIELD ENGINEER OFFICES IN EVERY INDUSTRIAL AREA IN THE UNITED STATES AND CANADA

SMOOTH RUNNING!





CARTER TRAVELERS

are the smoothest ever known!

When you specify CARTER TRAVELERS, you insure smooth running work —finer, stronger yarns—simply because there is no substitute for QUALITY. Manufactured under the rigid, scientific control of a modern metallurgical laboratory, the quality of materials and workmanship in CARTER TRAVELERS is consistently—and dependably—the best.

Carter TRAVELER COMPANY

Division of A. B. CARTER, INC., GASTONIA, N. C. Manufacturers of The Boyce Weavers Knotter

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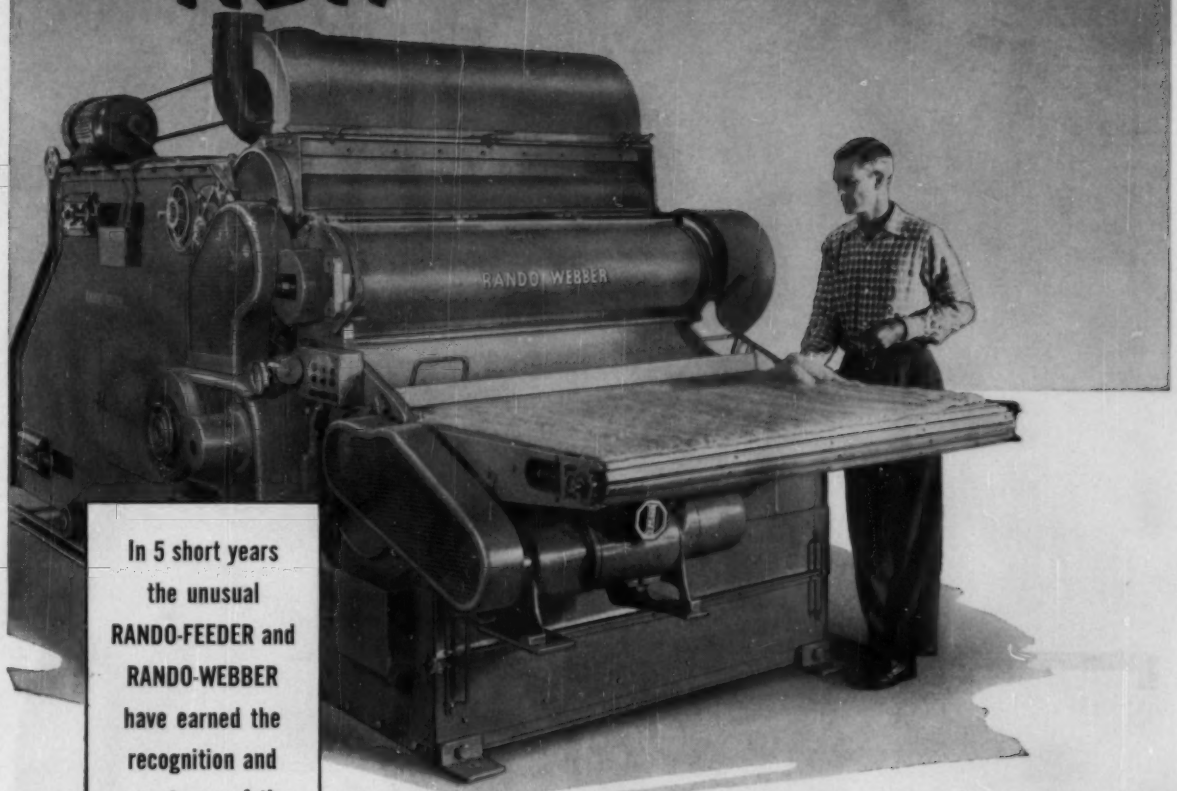
D. E. Phillips, 2702 Garden Lakes Blvd., Rome, Georgia • P. L. Piercy, 128 Hudson St., Spartanburg, S. C.
J. R. Richie, 1307 Crabapple Lane, Raleigh, N. C. • J. K. Davis, P. O. Box No. 129, Auburn, Ala.
C. E. Herrick, 139 Main St., E., Greenwich, R. I. • Oscar S. Lapham, 139 Main St., E., Greenwich, R. I.
Hugh Williams & Co., 27 Wellington St., E., Toronto, Ontario, Canada

RANDO-WEB® NONWOVENS

Made On The **NEW** RANDO-FEEDER® and RANDO-WEBBER®



In 5 short years the unusual RANDO-FEEDER and RANDO-WEBBER have earned the recognition and acceptance of the textile industry.

NO OTHER TEXTILE METHOD CAN MAKE SUCH

- ✔ High Quality Random-webs...
- ✔ as fast...
- ✔ at such low cost

HERE'S HOW . . . the RANDO-FEEDER and RANDO-WEBBER produce a continuous, uniform non-woven web of the highest quality . . . random orientation of fibers, with square, even selvage over the widest range of fibers. Various thicknesses of web can be made without cross lapping or laminating. And the RANDO-FEEDER and RANDO-WEBBER will do it faster and more economically than by any other method.

Write today for details on the new 40", 60" and 84" machines, and Bulletin 104.

TEXTILE DIVISION
CURLATOR®
CORPORATION
EAST ROCHESTER, NEW YORK

For more data, write this page number on Reader-Service card. →

Stainless is used extensively in the backwasher shown at left, and the scouring machine below, both manufactured by C. G. Sargent's Sons Corporation, Graniteville, Mass.

HOW stainless HELPS PRODUCE BETTER YARNS AT LOWER COST

Here are some of the reasons why *stainless* is the best friend the textile mill ever had:

Resists Corrosion — Lasts Longer — Stainless just about never wears out—and its smooth, rust-free surface resists the corrosive bite of most chemicals used in textile manufacture. The backwasher and scouring train illustrated, for example, use stainless wherever liquors or chemicals come in touch with metal. Their manufacturer says, "The caustics and acids used, particularly in scouring heavy grease wools, are pretty strong stuff—few other metals would stand up under such exacting conditions."

Stainless Babies Fibres — Stainless presents a smooth, non-snagging surface to stock in transit through dryers —especially important with cashmere and other soft, tender fibers. And stainless is just as vital for parts such as teeth and rakes in openers and pickers. "For stainless helps do a more thorough preparatory job without damage to fibers—makes for better, easier, far more economical production of first quality yarns." And, of course, stainless is about the easiest material to keep clean that you can find.

There's a lot more to the story of how stainless means greater efficiency—greater profits in the textile mill. Much of it is contained in Crucible's 32-page booklet, "Making the Most of Stainless Steels in the Textile Industry." Write for your free copy today.

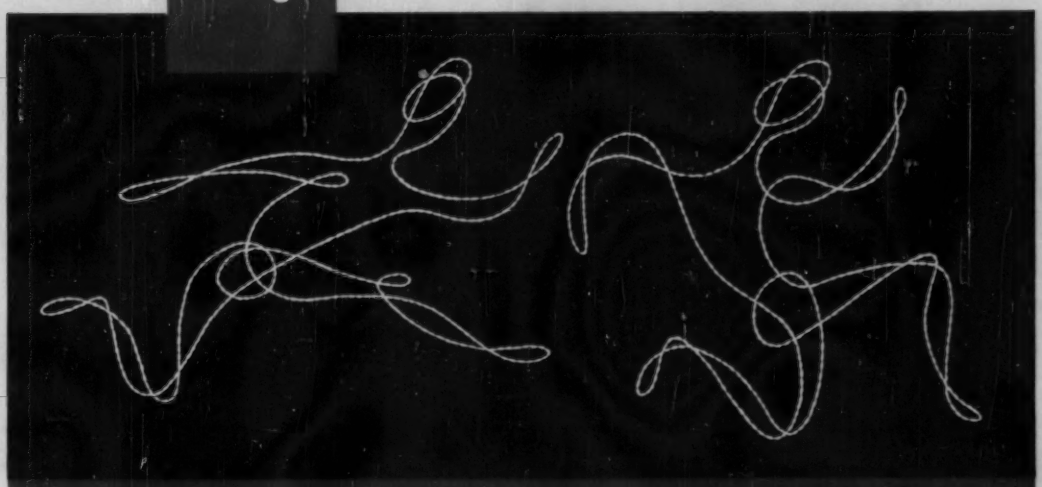
CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

Canadian Distributor — Railway & Power Engineering Corp., Ltd.

32 million yard dash!

Q. How do you break speed records without breaking yarn?



A. Use IRC Continuous Process Rayon—unblemished by human hands!

Coming in on the beam are 32 million yards* of IRC Continuous Process rayon that could easily fly right through your loom without stopping for a break.

The reason: unequalled uniformity, particularly in the twist. Big cause of broken filaments, slack twist, is practically unheard of in IRC Continuous Process rayon. And knots are few and yarn-miles between. In fact, mile after mile, it's perfect inch by inch.

It's 100% impossible for anyone's hands to damage this rayon while it's spun—they never touch it!

You'd think from the low cost that it was just *any* rayon—but this is the same yarn weavers of the most critical fabrics insist on! Give your looms a break instead of a breakdown—specify Continuous Process rayon.

*A typical beam of 150 denier yarn has 700 strands, each approximately 46,000 yards long. It adds up to over 32 million yards.

I·R·C

INDUSTRIAL RAYON CORPORATION
CLEVELAND, OHIO

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Question:

In how many textile applications can Taylor controls help you cut costs?

Answer:

Twenty-five *(at least)*

It's true! 38 years ago Taylor was the first instrument manufacturer to get interested in the textile business. We introduced the first practical system of Slasher control in 1919. We've grown up with the industry and today we can offer you instrumentation that will save you money on practically any application in your mill from the first phase of processing to the last. Listed below are some of the time-proven Taylor control systems now available:

SIZE COOKING
SIZE STORAGE KETTLE
SLASHING
KIER BLEACHING
CONTINUOUS BLEACHING
TENTERING
PIECE DYEING
PACKAGE DYEING
BEAM DYEING
FINISHING
MERCERIZING
SKEIN DYEING
TOP DYEING
JIG DYEING
WOOL SCOURING
CONTINUOUS DYEING
CAKE SOAKING AND DRYING
DRYING
CARBONIZING
WASHING
CONTINUOUS CRABBING
PADDING
DECATING
POWER PLANT
AIR CONDITIONING

Ask your Taylor Field Engineer! Or write Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.

Taylor Instruments MEAN ACCURACY FIRST

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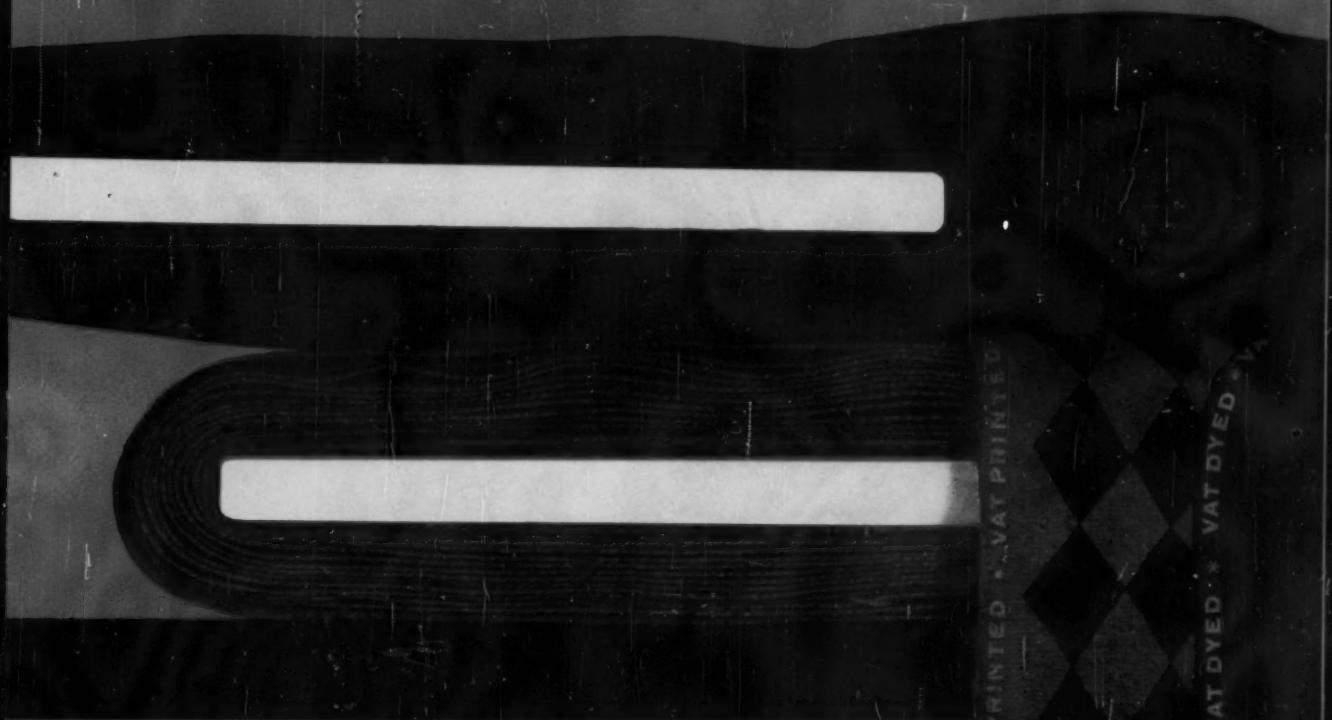
to please "colorfast-conscious" customers



use

INDANTHRENE®

VAT DYES

Your customers demand that dyed or printed cottons and rayons be colorfast. To them, the hallmark "Vat Dyed" or "Vat Printed" on the label or selvage of these goods is assurance that the colors are the best available for fastness to light, washing, perspiration, and dry cleaning. Vat colors assure you, too, of protecting the reputation of your product by preventing color failures.

In the textile industry, GDC's Indanthrene vat dyes are known for their unvarying high quality and wide range of colors. Indanthrene vat dyes are available in dispersible powders and "Infra" pastes, with the particle size most effective for the color itself and the dyeing or printing operation involved.

Call upon our Technical Service Department for assistance in any color or color-matching problem.

From Research to Reality

gdc gaf

GENERAL DYESTUFF COMPANY

A SALES DIVISION OF

GENERAL ANILINE AND FILM CORPORATION

435 HUDSON STREET • NEW YORK 14, NEW YORK

BOSTON • CHARLOTTE • CHATTANOOGA • CHICAGO • LOS ANGELES • NEW YORK • PHILADELPHIA • PORTLAND, ORE. • PROVIDENCE • SAN FRANCISCO IN CANADA: CHEMICAL DEVELOPMENTS OF CANADA, LTD., MONTREAL

Member of the Vat Dye Institute

Indanthrene Vat Dyes manufactured by the General Aniline and Film Corporation are sold outside the United States under the trademark "Fenanthren."

IN ONE WEEK YOU WILL SEE...

THE NEWEST innovations in knitting machinery (in operation)

THE NEWEST in sewing and cutting machinery

THE NEWEST in natural and synthetic yarns for luxurious knitted garments

THE NEWEST in labor saving devices in mill equipment to increase production efficiency

THE NEWEST in point of sale packaging equipment

COVER YOUR SUPPLY MARKET

In One Week . . .
In One Place . . .
the 43rd

KNITTING ARTS EXHIBITION

April 29 — May 3, 1957
Atlantic City Auditorium
Atlantic City, N. J.

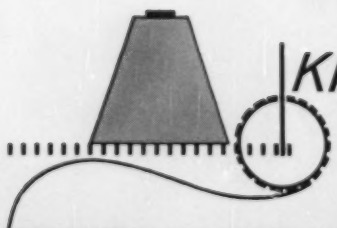
Sponsored by the 3 great divisions of the knitting industry

NATIONAL ASSOCIATION OF HOSIERY MANUFACTURERS

NATIONAL KNITTED OUTERWEAR ASSOCIATION

UNDERWEAR INSTITUTE

YOU CAN'T AFFORD TO MISS THE 1957
KNITTING ARTS EXHIBITION . . .
to be competitive is to be successful
Get ready to move ahead . . .
ahead of your competition



See the
KNITTING ARTS EXHIBITION
April 29 — May 3 • Atlantic City, N. J.
The largest trade show for knitting executives

FREE ADMISSION TICKETS ARE AVAILABLE BY WRITING TO SHOW MANAGEMENT,
KNITTING ARTS EXHIBITION, 332 PARK SQUARE BUILDING, BOSTON, MASS.
OR N. Y. OFFICE, 468 FOURTH AVENUE, NEW YORK 16, N. Y.

MAINTENANCE COSTS

slashed

with new Warner & Swasey
PLASTIC-BONDED FALLER BARS
at Caron Spinning Company

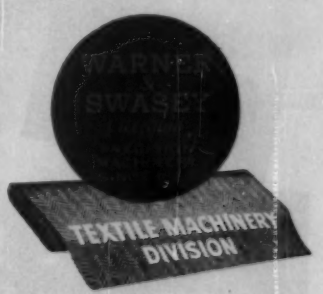
Nineteen Warner & Swasey Pin Drafters and three Converters produce 24 hours a day at Caron Spinning Company, Robesonia, Pennsylvania.

● Just 57 faller bars had to be repinned during 15 months' production—average cost, just 7¢ a day per Pin Drafter®. And at Caron's Robesonia, Pennsylvania, plant the four new single head, dual delivery Pin Drafters have been used 24 hours a day, 5½ days a week throughout this time. They produce a variety of synthetic and blended sliver.

Resilient, flat pinned Plastic-Bonded Faller Bars are ideal companions for these new, high speed Warner & Swasey Pin Drafters. Their development is another example of Warner & Swasey's continuing program to provide the textile industry with equipment for faster, lower cost production.

If faller bar maintenance is cutting into your profits, or if you would like more information about the application of our machinery to your work—Pin Drafters, Warner & Swasey-Pacific Converter, Warner & Swasey-Sulzer Weaving Machine®, or Whirlwind* Twister-Winder—it will pay you to call in our nearest Field Engineer.

® Reg. U. S. Pat. Off. *Trademark



SALES OFFICES

Main Office and Factory: 5701 Carnegie Ave., Cleveland 3, Ohio
61 Rivulet Street, North Uxbridge, Mass.
121 11th Street, N. E., Atlanta 3, Ga.
Suburban Square Bldg., Ardmore (Philadelphia), Pa.
624 Pecan Avenue, Charlotte 1, N. C.

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS...WITH A WARNER & SWASEY

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MECHANIZE all Scrubbing Operations into 1

with a COMBINATION SCRUBBER-VAC!

Applies cleanser, scrubs, flushes, and picks up—in ONE operation!

(Powder Dispenser and Level Cable Wind are accessories)

Here's a timely answer to the need for reducing labor costs—*a single cleaning unit that completely mechanizes scrubbing.* A *Combination Scrubber-Vac* applies the cleanser, scrubs, flushes if required, and picks up (damp-dries the floor)—*all in one operation!* Maintenance men like the convenience of working with this single unit... the thoroughness with which it cleans ...and the features that make the machine simple to operate. It's *self-propelled,* and has a *positive* clutch. There are no switches to set for *fast* or *slow*—slight pressure of the hand on clutch lever adjusts speed to desired rate. The powerful vac performs quietly.

Finnell's 213P Scrubber-Vac at left, for heavy duty scrubbing of large-area floors, has a 26-inch brush spread. Cleans up to 8,750 sq. ft. per hour (and more in some cases), depending upon condition of the floors, congestion, et cetera. (The machine can be leased or purchased.) *Finnell* makes a full range of sizes, and *self-powered* as well as *electric* models. From this complete line, you can choose the size and model that's exactly right for *your* job (no need to *over-buy* or *under-buy*). It's also good to know that *a Finnell Floor Specialist and Engineer is nearby* to help train your maintenance operators in the proper use of the machine and to make periodic check-ups.

For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1901 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

Originators of Power Scrubbing and Polishing Machines

Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

◀— For more data, write this page number on Reader-Service card.

This is the extractor at the wet end of a Ross dryer. The Louis Allis motors in sight are a D.C. Select-A-Speed driving the pull rolls, several textile beater motors, and two 50-hp textile motors driving vacuum pumps.

In this tufted-textile drying operation

Lint's No Problem

for Louis Allis Self-Cleaning Textile Motors and Adjustable Speed Drives

These Louis Allis motors and range drives are at work on the wet and discharge ends of a J. O. Ross continuous-loop, wet rug dryer installed at Dalton Carpet Finishing Company, Dalton, Georgia.

Louis Allis motors that clean themselves are used in all segments of the textile industry, on many kinds of equipment — tufting machines, cards, pickers, warpers, tenters, spoolers, slashers, batchers, padders, etc.

Whether you process tufted textiles or other types, let Louis Allis meet your power requirements, for greater production and more efficient operation.

See your Louis Allis Sales Engineer.

This is the Ross oven from the discharge end. Here, Louis Allis power includes a Gearmotor at each end of the oven, ten 15-hp inlet fan motors, and a 7.5-hp exhaust fan motor.

THE LOUIS ALLIS CO.
MILWAUKEE 7, WISCONSIN

TE-105

PROCTER & GAMBLE OFFERS YOU A CHOICE OF

HIGH, MEDIUM and LOW TITER SOAPS

FOR TOP PERFORMANCE IN TEXTILE PROCESSING . . .

HIGH TITER

AMBER

FLAKES · POWDER · GRANULES

The standard of 42° titer soaps. The flakes and granules contain 88% anhydrous soap; powder, 92% anhydrous soap. A light-colored, neutral soap which builds an unusually stable suds. Provides top performance in any textile processing operation which requires a soap of high titer. Granules—75-pound bags. Powder—140-pound bags. Flakes—110-pound bags and 185-pound drums.

MEDIUM TITER

NON-PAREIL

FLAKES · BEADS

A superior medium titer, all-purpose soap in bead or flake form for textile processing. Combines the desirable characteristics of both low titer and high titer soaps. Light-colored, neutral flakes or beads, made from carefully selected, medium titer oils which scour and rinse well at low temperatures. Packed in bags of 100 pounds.

IVORY

CHIPS · BEADS · POWDER

A neutral, medium titer white soap containing 90% anhydrous soap. Made from highest quality refined oils and fats. Dissolves readily, producing quick, stable suds at all temperatures. Very resistant to oxidation and discoloration when left in textile fabrics or when used as a textile finish. Excellent for processing all types of fibers. Ivory Chips packed in 110-pound bags and 160-pound drums. Ivory Beads packed in 50-pound bags. Powdered Ivory packed in 200-pound drums.

LOW TITER

Olate

FLAKES

A pure, neutral textile soap, exceptionally safe for efficient processing of all fibers and fabrics.

Contains 92% anhydrous soap. Made in the form of thin flakes from highly refined, low-titered liquid oils.

Characteristics . . . Highly resistant to oxidation, rancidity and odor development. Dissolves readily . . . rinses freely. Provides excellent detergency. Forms fluid, easy-to-handle solutions. Excellent scouring and fulling properties. Packed in 100-lb. paper bags; also in cloth bags and drums of 165 pounds.

PROCTER & GAMBLE
Textile Finishes Sales Department
Cincinnati 1, Ohio

Makers of
PROFINE, KYRO, ORVUS and PROXOL brands

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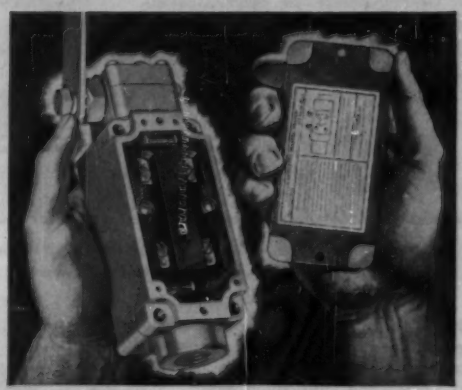
The new Cutler-Hammer 10252 Shipper Rod Switch provides every feature the textile industry wants. It's *fully* lint tight. It's *amazingly* compact. It's *really* versatile . . . and here's why.

LINT TIGHT—Lint, the big enemy of textile machines and control, is locked out of the 10252. Check these features of construction: 1. heavy die cast enclosure; 2. threaded conduit opening; 3. external mounting holes; and 4. heavy gasketed cover.

COMPACT—Small enough to fit in the palm of your hand, but big in performance. Large heavy duty butt type contacts and a sturdy mechanical mechanism assures years of dependable economical operation. Isolation of the electrical and mechanical mechanisms prevent the wires from "jamming" the switch mechanism.

VERSATILE—The 10252's mounting versatility cuts installation costs to a minimum. Here is a shipper rod switch which you can mount in any position, rotate the lever head to the correct motion plane, select either clockwise or counter-clockwise lever action without altering the switch mechanism, and accurately position the lever for precise operator "feel" and "pin-point" jogging.

The unique double contact design provides both positive motor starting and low voltage protection. The snap action closing of the first contact starts the motor. The second contact is pneumatically delayed to open to provide the low voltage protection. The delay period allows the motor starter interlock to pick up and maintain the circuit. Order your new C-H 10252 Shipper Rod Switch from your Authorized Cutler-Hammer Distributor today. CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wisconsin.



The perfect shipper rod switch *for roving frames—drawing frames—combers—narrow fabric looms—carpet looms.*

CUTLER-HAMMER
MOTOR CONTROL
C-H

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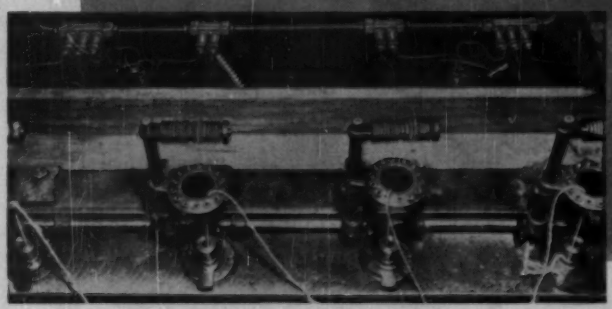
On OWENS-CORNING Flyer Twisters...

Lincoln CentrOmatic Pump serving the distribution system of lubricant injectors connected to machine bearings.



Lubricant Injectors, one for each bearing, permanently attached to bearings by steel feed lines.

"There's no more downtime due to faulty lubrication thanks to *Lincoln* Centralized Lubrication Systems"

E. Bay, Chief Engineer
Owens-Corning Fiberglas Corp.

"As a result of the use of Lincoln Centralized Lubrication System on high-speed textile flyers, twisting yarns in our Ashton plant, there has been no loss of production due to improper lubrication. We find Lincoln's Centralized Lubrication System very reliable, since it is fully automatic.

"We also would like to state our satisfaction in the interest shown by the engineers of the Lincoln Engineering Company in helping us with our lubrication problems."

E. Bay, Chief Engineer
Owens-Corning Fiberglas Corp.

LINCOLN'S Lubrication System specialists will be glad to work with you and recommend the time and money-saving Centralized Lubrication System best suited to your equipment.

Write for your free copies of Lincoln Bulletins No. 80-1 and 806-R... describing and illustrating a complete range of Centralized Lubrication Systems.

In one mill after another,

Lincoln Centralized Lubrication Systems are helping to increase yield and reduce operating costs from existing facilities by assuring the application of

the RIGHT LUBRICANT
in the RIGHT QUANTITY
at the RIGHT TIME
Automatically

Distributed nationally through leading industrial wholesalers located in principal cities

Lincoln

THE MOST TRUSTWORTHY NAME IN LUBRICATING EQUIPMENT

LINCOLN ENGINEERING COMPANY
Division of The McNeil Machine & Engineering Co.
5742 Natural Bridge Avenue • St. Louis 20, Mo.

The LONG-RANGE VIEW

Young Men Again

The textile industry needs 5,000 new college graduates in the next 10 years, more than are now enrolled in all U. S. textile schools, according to estimates by industry authorities. With enrollment steadily decreasing, the Armed Services taking their toll, and the normal drift into other lines of work that always occurs, there is little chance of getting the 5,000 needed unless enrollment is increased.

ACMI, textile schools, and some mills in recent months have begun organized programs aimed at increasing textile-school enrollment and upgrading the caliber of entering students. That is an excellent step. It will surely bear fruit if enough mills get seriously behind it.

What Mills Can Do

On p. 90 of the November issue, we published a list of 12 things business and industrial firms are doing to help relieve the shortage of technical manpower. This list applies to textile-school enrollees and graduates.

In essence, the 12 things being done are directed toward:

1. Making an industry attractive to high-school students
2. Building up the industry's reputation with teachers in high schools and colleges and with the public
3. Helping students financially
4. Intelligently using the trained people hired

Most of these things add up to public relations. They consist in persuading many people—not only prospective students—that the textile industry is a good place to work IN COMPARISON WITH OTHER INDUSTRIES, BUSINESSES, AND PROFESSIONS. They consist also in providing adequate opportunity, challenge, position, and pay for qualified men and women attracted to mills.

Enlightenment Is Needed

If textile schools are not able to enroll the students needed by the industry and mills are not able to hire the quota of graduates and experienced specialists they need, mills have only themselves to blame. Almost every week acts of clumsy public relations are committed by mills.

For example:

In the industry fight for Japanese textile-import quotas early last year, the most extravagant claims of injury and the direst predictions for the future of the industry were made.

In many public speeches, industry leaders dwell at length on the low profits of the industry. Time after time they compare it most unfavorably with other U. S. industries, in spite of the fact that "the industry" includes many mills that should have been discarded many years ago.

We often see industry spokesmen deliberately juggle statistics to prove the industry is dying in order to serve some point they are trying to make.

Last month an important mill was sold out of existence because the workers had the temerity to protest their treatment.

Last spring a high-school graduate interested in entering the textile industry and working in a mill until time to enter college in the fall was offered a job by a mill on condition he would go to work a month before high-school graduation.

In many cases where one organization buys another, key men in the bought mill are discharged wholesale.

Does Anybody Wonder?

With such things occurring all the time, can anybody wonder that young men are frightened away? Or that high-school teachers and college instructors and officials who must counsel young people seeking vocations cannot recommend the textile industry?

Before any recruiting program will be very successful, the textile industry must clean its house. Mill men and associations must practice a little self-restraint in their public acts and announcements.

After all, there really is no great harm done if we admit that the industry is not likely to die tomorrow. It really is not immoral to admit occasionally that business is good and (painful admission!) some profit is made.

There are studies available comparing the progress through the first 10 years by the average graduate entering the textile industry and other industries. The facts significantly favor the textile industry. Therefore it is not conditions in the industry that have frightened young people away. It is the dismal relations practiced and the "poor-mouth" picture presented by the industry itself.

O. M. Thomas

Nearly every competitive advantage starts with the machine

Study the technical superiorities and production economies of the *improved* "Reading 100". Watch it in action. Check its flexibility and smooth, high-speed operation. See the quality of its knitting. Then figure the arithmetic of this *improved* full-fashioned knitting machine and know what it can mean to you in higher quality and lower per-dozen costs.

The "READING 100"
Full-Fashioned Knitting Machine

Knitting Machine Division
TEXTILE MACHINE WORKS · READING · PENNA.
Builders of Textile Machinery Since 1900

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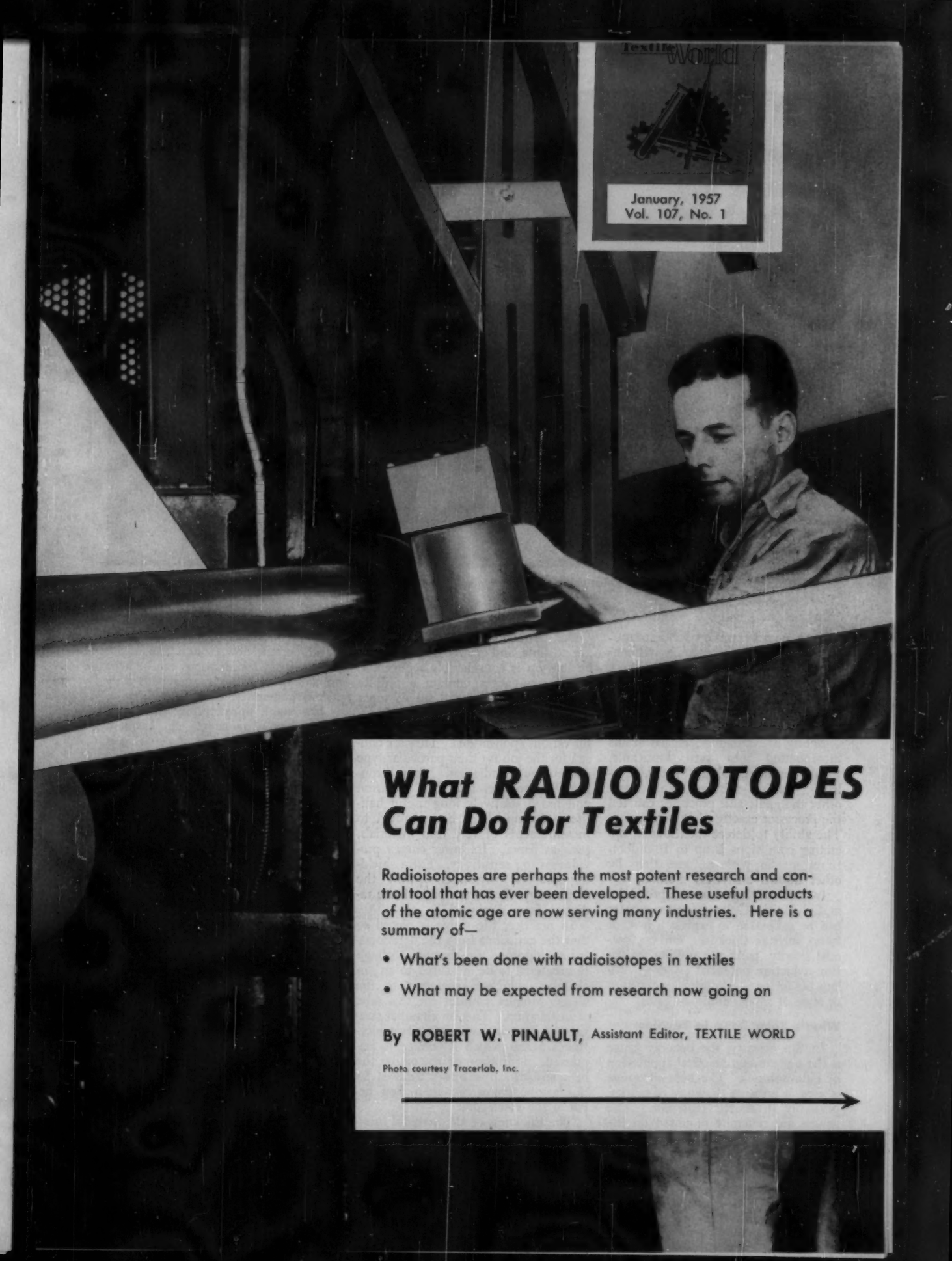


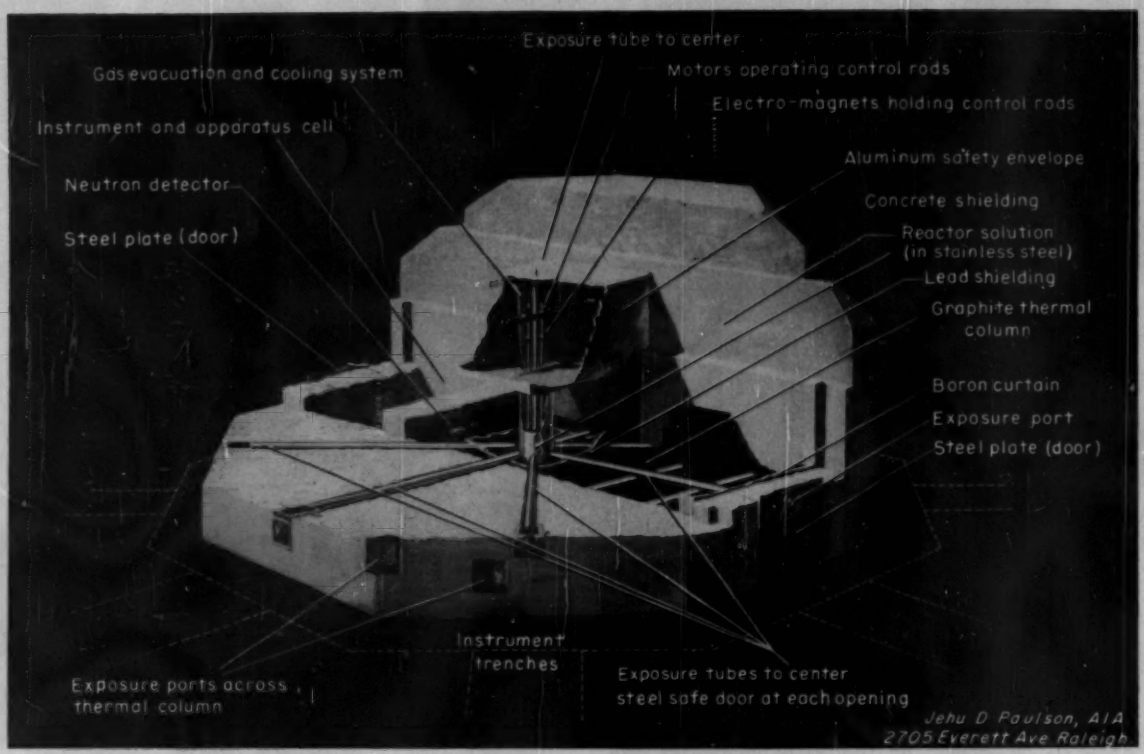
What RADIOISOTOPES Can Do for Textiles

Radioisotopes are perhaps the most potent research and control tool that has ever been developed. These useful products of the atomic age are now serving many industries. Here is a summary of—

- What's been done with radioisotopes in textiles
- What may be expected from research now going on

By **ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

Photo courtesy Tracerlab, Inc.



THE RALEIGH REACTOR was the first unit of its type installed in a textile school. Full flux is 10^{11} per sq. cm. per sec.

THE POTENTIALITIES OF RADIOISOTOPES in textile research and control are fantastic. Since TEXTILE WORLD first reported on this new tool [Dec., '48, p. 103], increasing interest by mills has led to more research work on textile applications.

Acting as watchdogs, tagged atoms incorporated into yarn lubricants, sizing formulas, bleach baths, dyebaths, coating mixtures, and many other materials and processes can tell the processor exactly what is going on. The ability to detect variations in operating conditions is up to 10-million times greater with isotopes than by other known analytical method.

Instruments based on the principles underlying the Geiger-Mueller counter can be calibrated to express a host of terms such as thickness, add-on, specific gravity, parts per million, oxidation-reduction potential (Redox), gallons per minute—almost any condition or state of solids, fluids, or gases.

What's Been Done in Textiles

In this country, the beta-ray gauge is the outstanding practical application of radioisotopes. The beta-ray gauge is used to measure thickness of fabrics, primarily in coated materials. The gauges are generally mounted on the coating ranges and give a running picture of the uniformity of the coating. Quick corrections of undue variation are possible, and off-weight production at start-up is considerably reduced.

Beta-ray gauges contain a minute particle of one of several radioisotopes such as Strontium-90, Cesium-137, and Ruthenium-106, which are used for various applications. They are chosen for the job for their particular type and energy of radiation. Thus, Strontium-90 produces only beta radiation and has a relatively long useful half-life. Cesium-137 is better suited to measurements of very thin materials, such as paper. Its lower energy provides greater sensitivity. Extra shielding protects personnel against the gamma rays that are a part of the radiation from Cesium-137.

In practice, the gauge is placed so that the emissions from the deteriorating radioisotope are directed through the material to be measured to an ion chamber, which is preferred to the Geiger-Mueller counter for this type of installation. The ion chamber consists of a cavity containing two electrodes across which a voltage is impressed. Ionization of the air by the beta and/or gamma rays radiated by the isotope causes current to flow between the electrodes.

The thickness of the material interferes with the transmission of the radiations from the source of material, and of course variations in thickness affect current flow. These gauges are so sensitive that variations can be kept to 1% of standard in materials only a few thousandths of an inch thick.

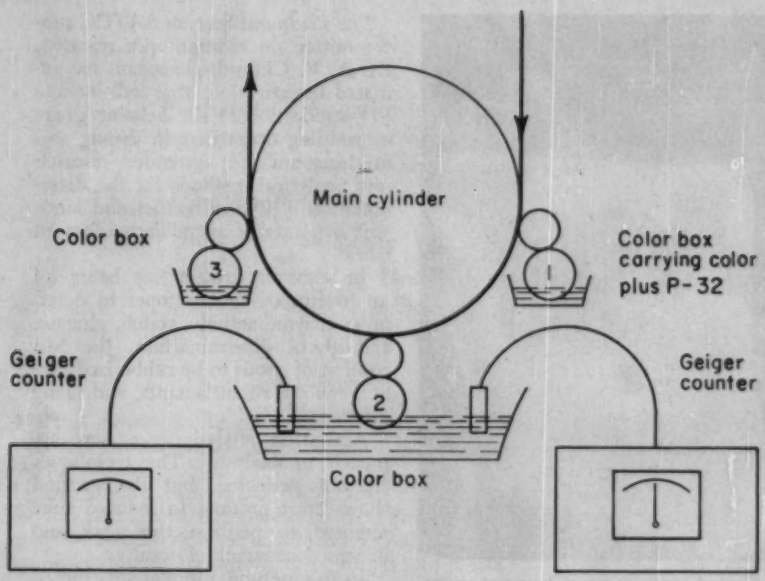
For some applications, the backscatter type of gauge is used. In these installations, the source of radiation is surrounded by the ion chamber, which receives by reflection radiations not absorbed by the material being checked.

The variations in current produced in the ion chamber may be used to affect a meter, or a vacuum tube, and ultimately to operate recorders or automatic controls that will maintain the desired conditions.

What's Been Done
—Color Migration

Another textile application of radioisotopes, originating in England, is the inclusion in a print color of a few millicuries of P-32. As the run progresses, and before contamination of the following color is visible to the printer, Geiger counters announce the presence of the tagged color in subsequent color boxes.

Results are great savings in off-color yardage that used to be produced before it was caught by the printer. P-32 has a half-life of 15 days; so there is no problem of fabric contamination that would affect the consumer.



TRAMP COLOR from Color Box 1 is quickly detected by the Geiger counters in Color Box 2 if P-32 has been added in very small amounts to the color in Box 1.

RADIOISOTOPES are used by Dr. Otto Teszlar in analytical work at N. C. State College School of Textiles. Shielding gloves, special bench paint, and Geiger-Mueller counter are characteristic of the new techniques in radiation laboratories.

—Yarn Lubrication

A lubricant applied to synthetic-fiber yarns in the initial spinning process should be uniformly deposited for best results. By adding a trace of radioactive bromine to the oil and measuring the radiation from the oiled yarn, a standard can be set up and variations easily detected.

—Pad Performance

In pad dyeing, in padding on resist salts or finishes, or in coupling naphthol colors, a radioactive tracer in the pad liquor helps materially in noting variations in the solution and the amount of dyes or chemicals deposited on the goods. This development has been used in England.

Variations in the absorptive qualities of fabrics affect processing results, and the tracer technique provides a very delicate and accurate means of locating trouble. Before radioisotopes were available, imperfections in padding on resist salts or naphthol bases could not be detected before printing —when it was too late.

—Detergent Performance

By mixing Ca-45 with a soiling medium applied to test fabrics, the efficiency of various detergents can be checked to a degree hitherto impossible. As long as traces of the soil remain, Geiger counters will react to the even fainter traces of Ca-45. The activity of the Geiger counter is a measure of the detergent's efficiency.

—Testing Cloth Condition

Where fabrics are to be finished with water repellents, all traces of wetting agents, penetrants, and the like that have been used in processing should be removed. Such auxiliaries, if tagged, are detectable in amounts far less than those that would interfere with a good water-repellent job. Acceptable levels of radioactivity in the goods prepared for finishing can be quickly established and maintained by proper washing

These examples, taken from work already done in the textile field, give some idea of the versatility and value of radioisotopes in processing.

[For a more complete resume of available materials, methods of handling, costs, and a complete bibliography of what has been done with radioisotopes in industry, see *Isotopes —An Eight-Year Summary of U. S. Distribution and Utilization*, obtainable from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at $2.]

Because radioisotopes are admittedly dangerous to handle carelessly, only qualified personnel are permitted to work with them and only in laboratories equipped for the purpose. Isotopes may be purchased only upon application to the Atomic Energy Commission, Oak Ridge, Tenn.

These restrictions have slowed down spontaneous research by many laboratories into the application of radioisotopes to the textile and other industries; but considerable work at the laboratory level is going on, and much more is projected.

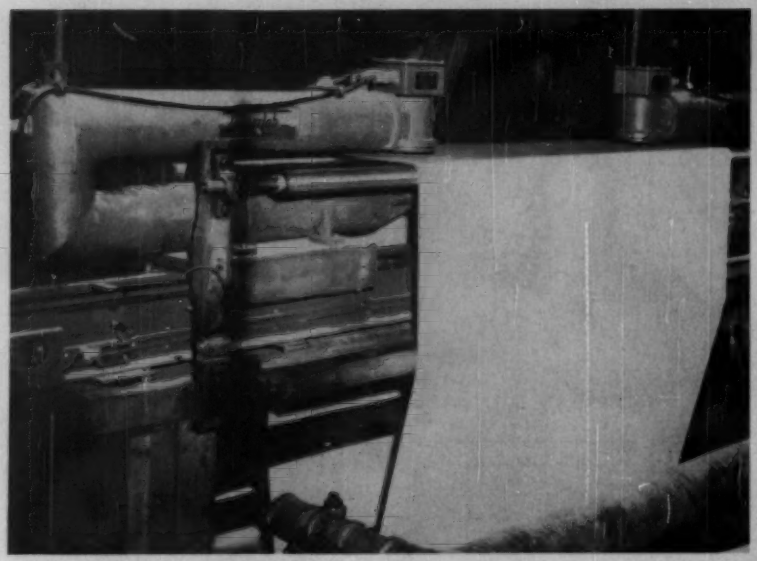
A deterrent to much plant-scale application so far has been the high costs involved in training personnel, equipping laboratories, and purchasing the necessary control or detection equipment. As the evidence of the value of radioisotopes in textile processing piles up, these costs will begin to look more like good investments.

One of the focal points of radioisotope research is at N. C. State College, where a uranyl sulfate-cobalt reactor is installed. At the School of Textiles, a radiation laboratory is also in operation; and an appropriation for a larger and better-equipped laboratory has been approved.

The Textile School at Clemson College is also preparing to go ahead with research into radioisotope applications in textiles and other fields.

Preliminary work at N. C. State College has included exposing 31 fibers to the effect of radiation from the reactor. Some of these fibers are not yet in commercial production.

Results so far indicate that cellulosic fibers were degraded by bombardment with gamma rays, while exposure of nylon fibers of low draw showed an improvement in the modulus of elongation. Indications are that the chemistry of the fiber determines the basic result, even when the physical characteristics of the fiber vary.



ABSORPTION OF BETA RAYS by the material is noted by this type of beta-ray gauge. These units are on sliding mounts so that different areas may be checked and a profile reading obtained.

Photo courtesy of Tracerlab, Inc.

Elementary tests have been made on the exposed fibers to determine the effect of radiation on strength, elongation, and elasticity. Chemical analysis of the fibers to determine exactly what sort of degradation occurred is now in the works.

Isotopes Aid Analysis

Dr. Otto Teszlar is in charge of the N. C. State radiation laboratory and has been qualified by the Atomic Energy Commission to work with irradiated materials. He is working out analytical methods that employ isotopes or depend on the radioactivity of samples for quick and accurate results.

The accuracy of such tests generally exceeds older methods of analysis, and the time element is considerably reduced from several hours to a matter of minutes for the analysis.

N. C. State is also working with radioisotopes as tracers in fiber processing.

For example, in the carding operation, tagged fibers can be detected at each stage of carding to indicate how many times a fiber goes around the cylinder before it is removed by the comb.

Other studies of fiber nature and fiber behavior in processing are scheduled.

In other research centers, more work is going on. Already the Japanese have found that by irradiating their synthetic-fiber Vinylon its resistance to heat can be upped from 120° C. to 200° C. Gamma rays from Cobalt-60 or deuterons from a cyclotron will do the trick.

Studies on the effect of radiation on cotton fiber are now going forward at the Massachusetts Institute of Technology under a contract with the Southern Utilization Research Branch of the U. S. Dept. of Agriculture in New Orleans, La.

The work will be directed toward investigating the effect of radiation on strength, elasticity, resilience, dye affinity, and other factors on cotton yarn and fabric. Studies will be made of the effect of radiation on subsequent chemical modification of cotton and how radiation affects the polymerization of coatings that may be applied to cotton.

Interest in the application of radioisotopes to textiles is growing, as is indicated by requests for information that are reaching research centers almost daily. In other industries, there are over 1,000 users of isotopes, a 500% increase over five years ago.

Wet Processing May Benefit

In addition to the work and results mentioned earlier, a joint effort of the AATCC and the N. C. State School of Textiles has reached the stage where projects are being laid out.

The Piedmont Section AATCC subcommittee on radioisotopes research, Dr. A. F. Clifford, chairman, has initiated investigations that will include (1) application of the beta-ray gauge to padding operations in dyeing and finishing and (2) extended research into analytical methods for the determination of Cl_2 in textiles and kinds and amounts of metallic residues in fabric.

In addition, projects are being set up to employ radioisotopes to determine enzyme activity, starch, glucose, and glycol determinations, the Mn content of goods to be rubberized, the SO_4 content of surfactants, and many others.

Activation analysis is a new approach to analysis. The techniques are not perfected, but the method shows great promise in reduced time required to perform the work and increased accuracy of results.

In this method, samples are exposed to radiation and then placed in a spectrometer, which will detect and estimate the elements that have been converted to isotopes by exposure to radiation.

In the field of dye research, more knowledge of the mechanism of dyeing will be sought through the use of radioisotopes; and a study of the mechanics of carrier dyeing is projected.

The avenues of exploration are endless, and the potentials of useful discoveries beyond imagination. Radioisotopes may well be the key to the discovery of improved textile materials and control of processing that have only been dreamed of before.

More-detailed accounts of the work that has been done in the textile industry with radioisotopes to date can be found in the following references:

"Control of Padding Process by Radioactive Labeling," H. B. Hampson and E. W. Jones, *Journal of the Society of Dyers and Colourists*, V. 69, pp. 620-28, Dec., '53.

"Use of Radioisotopes in the Textile Industry," C. E. Crompton, *American Dyestuff Reporter*, Vol. 42, pp. 533-9, Aug. 17, '53.

"Radioactive Isotopes in Roller Printing," W. Meitner and H. B. Hampson, *Journal of The Society of Dyers and Colourists*. V. 69, pp. 283-4, Aug., '53.

"Use of Radioactive Tracer Isotopes in the Rayon Industry," Paul Warner Frisk, *Rayon & Synthetic Textiles*, Jan., '50, p. 39.

"Radioactive Sodium as a Tracer in Dye Solutions," E. R. Trotman, *Textile Recorder*, V. 69, pp. 93-4, July, '51.

BINDERS for Nonwoven Fabrics

The binder is essential to the production of modern nonwoven fabrics, and the choice of a proper binder can be considered as important as the choice of the fiber. Here are some pointers on—

- **Self-bonding webs**
- **Binders used alone**
- **Combinations of binders and thermoplastic fibers**

THE BINDER is the key material in the production of modern nonwoven fabrics.

The binding material may be added to the fibers, or a thermoplastic fiber may be used by itself or in a blend to cause binding of the whole when heat is applied to the web.

The choice of a binder will depend on the fibers to be used and the end use of the fabric. One binder may suit several fibers and a number of end uses, but often a particular combination of fibers and binders is required.

How Binders Are Classified

There are a great many possible binder systems, and many of them are useful in producing nonwoven fabrics. All binders fall into the following classifications:

1. Solutions
2. Thermoplastic fibers
3. Thermosetting or thermoplastic powders
4. Emulsions

Sometimes the binder system will be a combination of two or more of the above classes of materials.

Solution-type binders may be water-soluble or solvent-soluble. Starch, polyvinyl alcohol, glues, casein, and alginates are typical of water-soluble binders. These materials are easy to apply but have the disadvantage of being water-sensitive.

Solvent solutions will produce nonwoven fabrics that resist degradation with water. An example is a benzene solution of rubber. After application to the web, the benzene is evaporated, leaving the rubber. The disadvantage of this system is the fire hazard and necessity of recovering the expensive solvent.

Solvents are also used to modify the fibers in the web so that under heat and pressure the fibers adhere to each other and form a fabric.

Solutions of thermosetting resins are also used. They may be water- or solvent-based; in either case, the end product is not water-sensitive.

How Thermoplastic Fibers Are Used

Thermoplastic fibers may be included in the web of a nonwoven fabric and will bind the whole together when the web is passed between heated rolls.

Polyvinyl chloride, polyethylene, vinylidine polymers and copolymers, and polyamide or polyester fibers are examples of thermoplastic fibers that may be used as binders. A thermoplastic fiber used as a binder should have a melting point well below that of the base fiber to insure good flow and bonding at all crossover points.

It has been found that the binding fiber should be chemically similar to the base fiber to get the best end product.

Resins Produce Bonding

Thermoplastic or thermosetting resins are often used to bond the web. In such processes, the dry resins are dusted on the web and converted to the bonding condition as the web passes between heated rolls.

The process is useful in the production of compact products, but difficulty in getting uniform distribution of the resins has limited the development of this method.

Water-based emulsions comprise the largest class of binders for nonwoven fabrics. A wide range of properties, ease of handling, and the variety of materials that lend themselves to this type of application have made emulsions popular as binders.

All the synthetic latices, such as polyvinyl chloride, polyvinyl acetate, nitrile, polyacrylic, polychloroprene, and the GR-S types, and natural rubber fall in this class.

Dispersions can be made of thermoplastic powders such as polyethylene; and in this form, more-uniform results are possible than when the binder is dusted on in the dry state.

Emulsions generally contain the primary binder plus additives that are needed if high fabric strength to fabric weight is required. Most of the emulsions should be located at fiber junctions to get high strength.

If the web is to be heat-sealed to another surface, the emulsion should be well distributed over the fibers.

These ideal conditions are not easily achieved, but generally binders with poor wetting qualities will tend to collect at fiber intersections. The high interfacial tensions in such systems tend to cause the liquid to draw up in droplets.

Binders that have good wetting properties—sometimes achieved with additives—will flow more evenly over all the surfaces contacted.

Emulsions often contain mixtures of nitrile latices, thermosetting resins, and stabilizers. In other cases, several nonbonding materials may be incorporated with a thermoplastic material to produce an end product of certain characteristics.

The amount and type of binder to use cannot be arbitrarily stated. The end use of the product determines the binder, its modifications, and the binder-to-fiber ratio.

Typical Formulations

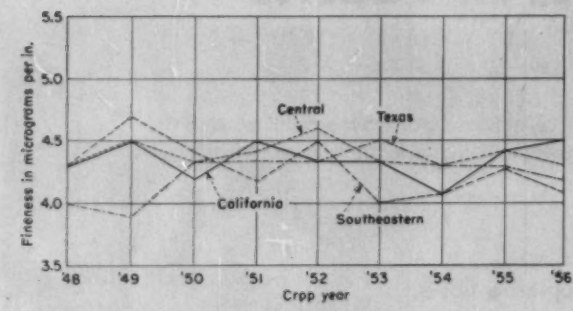
One of the major outlets for nonwoven fabrics is for backing vinyl upholstery. Binders for this work must have good adherence to the vinyl and produce a strong backing. A soft hand is also desirable.

If the fabric is to be laminated to the vinyl sheet, polyvinyl chloride, nitrile, or GR-S latices may suffice.

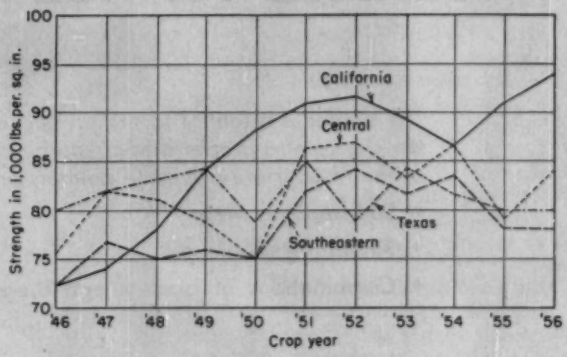
(*Continued on page 166*)

From a paper presented by Neil H. Sherwood at a meeting of AATCC in Charlotte, N. C.

Fiber fineness by micronaire



Fiber strength by Pressley test



What You Can Expect From 1956 COTTON

USDA fiber and spinning tests, based on the first pickings, show that—

- **Fiber strength is up in the Central states, Arizona, and California but remains the same in the Southeastern region**
- **Yarn strength improved in all areas**
- **Yarn appearance is off a little in all states except North and South Carolina**
- **Fiber fineness is off slightly in about half the states**

By F. L. GERDES, Cotton Technologist, USDA, Retired

COMPARED WITH THE 1954 CROP, the Southeastern crops of 1955 and 1956 showed slightly coarser and weaker fibers. However, the 1956 Southeastern crop on the average was better in yarn strength than either of the previous crops, especially in South Carolina and Georgia. These states had the best yarn appearance in the region in 1956.

In the Central states, yarn strength for the 1956 Arkansas crop appeared to be the highest of all the Central states during the last two years. Some improvement over the previous two years was also indicated for the 1956 Louisiana crop. For the Central area on the average the three crops —1954, 1955, and 1956—were all good with respect to strength.

Yarn-appearance indexes in the Central states averaged from 102 to 105 during the last three years, indicating smooth yarn in most states, especially in Mississippi and Arkansas in 1955 and 1956. Tennessee showed a loss in 1956.

Based on data from "Summary of Fiber and Spinning Test Results for Some Varieties of Cotton Grown by Selected Cotton Improvement Groups," "Crop 1955, USDA, AMS, February 1956," and "Fiber and Spinning Test Results for Some Varieties of Cotton Grown by Selected Cotton Improvement Growers, Crop 1956."

Yarn strength up in Texas

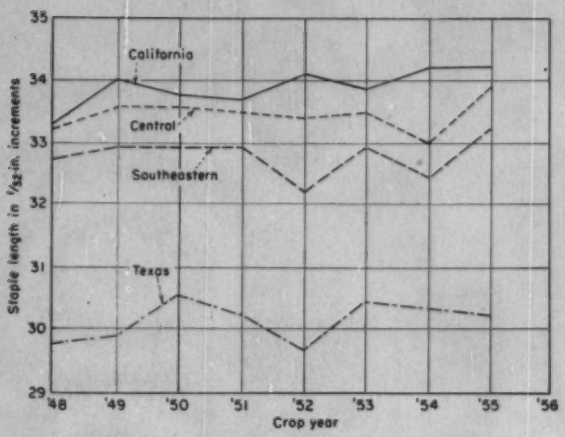
With the exception of Central Texas, where droughty conditions and crop failures prevailed in 1956, Texas showed substantially higher yarn strength in 1956 than in 1954 and 1955. Northwest Texas, with relatively high productivity, had much better yarn in 1956 than in 1955 insofar as strength was concerned. Yarn-appearance index for 1956 was lower than both the 1954 and 1955 crops in south and central areas of Texas. For the three-year period, Northwest Texas showed a narrow range of good indexes from 100 to 104.

In studying the available information from a regional standpoint, attention is called to the fact that in 1956 the fiber strength of the Central crop averaged 84 in the upper range. The Southeastern crop averaged 78 in the lower range. On the other hand, Arizona and California averages, 92 and 94, were in the higher range of fiber strength —the strong class. Fiber-fineness averages were slightly lower in the Southeast than in the other areas.

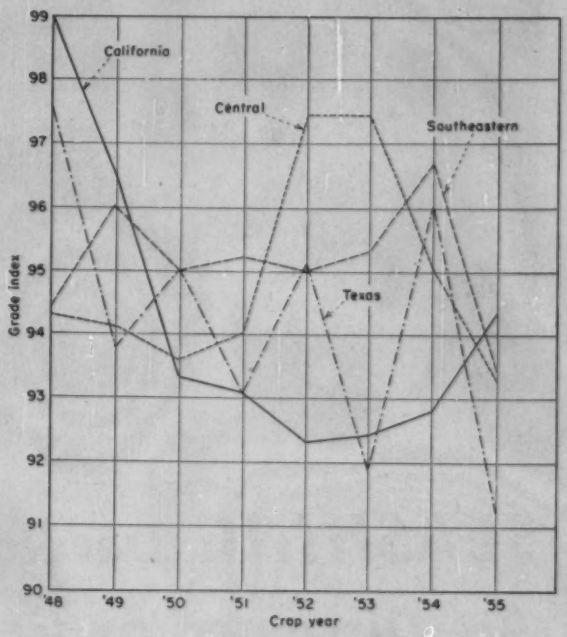
Yarn-appearance indexes for 1955 and 1956 were exceptionally good in the Central states, somewhat higher than in the Far-Western states. The Far-Western states, as usual, showed significantly higher break factors for yarn strength than did the other states and regions except the El Paso and Pecos Valleys.

Now that a decade of fiber and spinning-quality information is available for the cotton crops of the United States,

Cotton staple lengths



Cotton—grade indexes



some significant observations may be made on the trends in the various quality factors.

It can be safely said that with the exception of the Western and Far-Western states, the trend has been toward finer fibers in recent years in most states. In the Central states this factor was largely responsible for a slight tendency toward increased yarn strength. Changes in variety and weather conditions no doubt have been the principal contributing factors.

Associated with the increased fineness, there is a tendency among most states to produce cotton of increasingly lower yarn appearance. Gradual changes in harvesting and ginning practices could conceivably play a minor role in the trend toward lower yarn appearance. Available information is inconsistent in this respect.

Breeders have been active in increasing the fiber strength of new strains of cotton. Results of these efforts were definitely observed in recent years. On the other hand, yarn strength has done well to hold its own, especially since 1951. In this connection, it is significant that there has not been a record low-breaking-strength crop since 1950.

Yarn-appearance indexes reached their peak in the early 1950s and have gradually become lower since that

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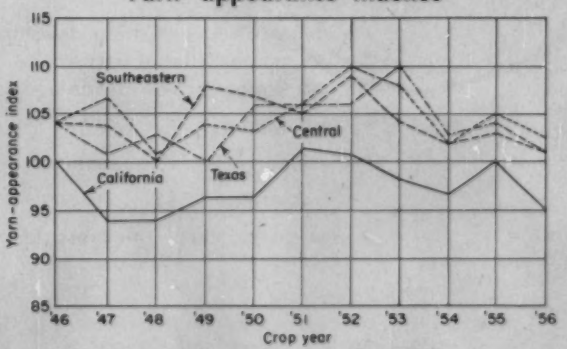
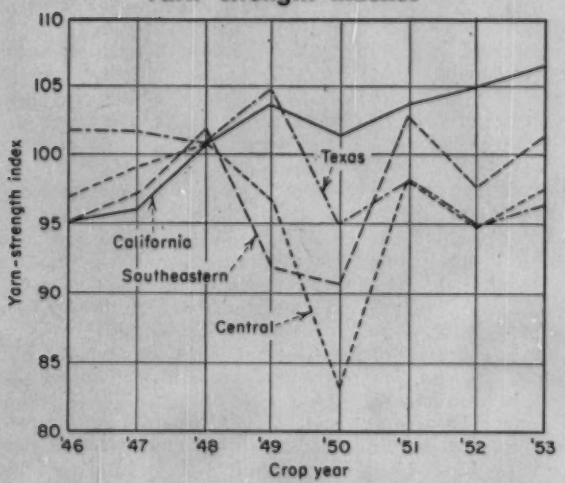
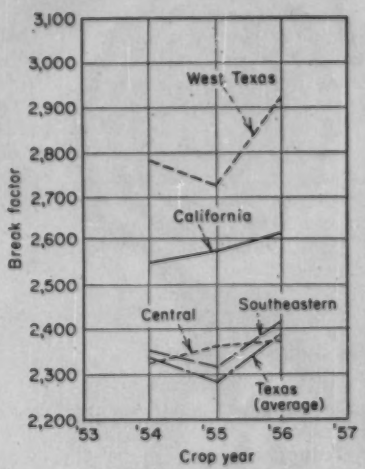
Yarn—appearance indexes



Yarn—strength indexes

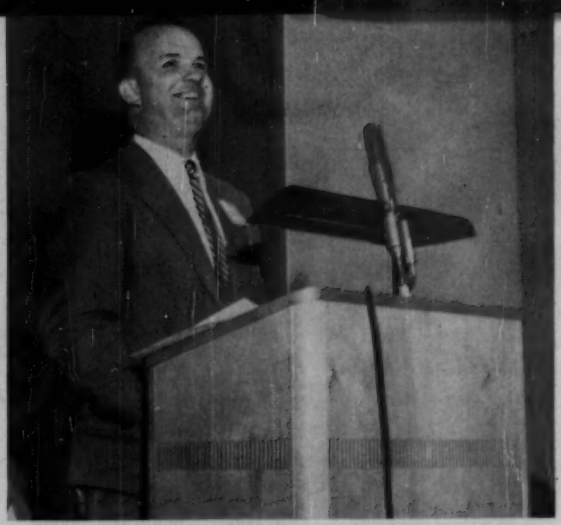


Yarn—skein break factors



YARN-STRENGTH INDEXES were changed to average yarn-skein break factors by USDA in 1954.

J. A. FIFE, general chairman, calls for an extemporaneous discussion by the approximately 300 mill men at the meeting.



LLOYD K. WILLIAMS of Thomaston Mills asks direct questions during the slashing discussion.

SLASHING Developments Are Discussed by Georgia Men

A number of new slashing developments, as well as old problems, were discussed at the fall meeting of the Textile Operating Executives of Georgia. Among the controversial subjects were—

- **Size boxes**
- **Rubber vs. wool squeeze-roll covers**
- **Overwaxers**
- **Hot-air vs. cylinder dryers**

SLASHING METHODS AND EQUIPMENT were discussed by Georgia mill men at the fall meeting of the Textile Operating Executives of Georgia. The meeting, held in the Harrison Hightower Building at Georgia Tech., Atlanta, Ga., was attended by approximately 300 mill men representing 1,247,212 operating spindles in the state.

The prepared questions drew a variety of answers. From the answers, it can be assumed that there is a difference of opinion on some phases of slashing. However, a sameness in many of the answers denotes a trend toward standardization in much of the slashing process.

Mills Use Moisture Controls

Most of the mills reporting use either an electronic or a mechanical moisture control at the slasher. The average moisture content of sized warps is about 7%. That moisture regain in sized warps is considered important is demonstrated by such reports as:

Mill B–"The moisture control is set at 7%, ± ¼%. Speeds vary from 75 to 115 yds. per min."

Mill D–"Warps from 1,950 to 6,910 ends; average yarn number 22½s. On heavier sleys (above 100), we have 6% moisture; and on lighter sleys, we leave 7%. We try to leave about 10% moisture in spun rayon."

Mill F–"Moisture regain is 6.75% on yarns varying from 2.60s with 1,380 ends to 30.75s warps with 5,696 ends. Moisture control operates to vary speed rather than steam pressure."

Mill H–"To control moisture in slashed yarn, we now use a moisture monitor to supplement judgment. The instrument indicates continuously whether the yarn coming off is wet, normal, or dry and is calibrated to indicate in the normal band when the moisture content is 7.5%, ± 0.6%. Drying is done on two steam-heated cylinders of the older type of slasher.

"Our warps are 26s and 31s yarn, ranging from 720 to 3,146 ends on 31s and 3,208 and 4,812 ends on 26s.

"We think that we have been able to cut down some on the amount of steam used since having this instrument to check by. Also, it is very sensitive and will indicate some other out-of-line condition such as a bad blanket causing wet spots or uneven size application."

Mill I–"The instrument is set to let 8% moisture remain in the yarn. This control will automatically increase or decrease the speed of the slasher to maintain the 8% moisture."

Mill S–"We have six mechanical-type moisture controls and two electronic types. We know the approximate speeds our various styles will run and still maintain the 7% moisture indicated by the graph. Our standard moisture content is 7%.

"It is the slasher tender's job to

check the warps being run to determine wnether the slasher is being run too slow or too fast. Even though we operate by use of the instruments, we check often enough to be sure they are operating satisfactorily."

Three Reports on Size Applicators

Only three mills reported results obtained by use of the Griffin size applicator:

Mill D—"On styles having fewer than 4,000 ends, weaving efficiency increased over some styles run in conventional boxes. Slasher production is approximately the same. There's slight improvement in slasher operation because of fewer broken ends and fewer laps, and ends stay in the lease better.

"We are unable to set for predetermined pickup but do vary pressure from 20 lbs. for average styles up to 30 lbs. for greatest pickup. Our experience revealed the same amount of size added at 20- and at 40-lb. pressure."

Mill K-1—"We have Griffin size boxes on our hot-air slasher. These boxes do a very good job. We have less rolling of yarn in the box and less trouble with streaks of hard size when the slasher is stopped. We can control the percentage of pickup with the dresser roll, which is loaded pneumatically."

Mill S—"We have had a Griffin size box for only a short time; so we have not completed what we would consider conclusive tests at this date.

"From our brief experience, we like what we have seen of this size box. We believe we will be able to control our pickup at a predetermined percent closer than we have been able to do with our older-type size boxes."

For Squeeze Rolls—Wool vs. Rubber

The perennial question of which is best—rubber-covered or wool-covered squeeze rolls—drew varied answers.

Mill B—"We have been using rubber-covered squeeze rolls for about 15 months and find that they do a superior job of dressing over wool blankets. The size pickup runs from 7 to 8% on all warp numbers with 300 psi. applied to the squeeze rolls.

"From the weaving efficiency standpoint, we picked up about 1%; but this gain was due to the entire slasher installation rather than just the rubber squeeze rolls."

Mill D—"On back squeeze rolls, we have not noticed any more pickup with rubber-covered rolls. We find no difference in speed of drying, yarn sticking to cylinder, shedding, or loom efficiency. We did get 3 to 4% more size pickup with rubber rolls in both positions.

Mill F—"Rubber rolls do not seem to squeeze the yarn or dress the yarn as well as wool-covered rolls. The yarn begins to stick to the cylinder unless the slasher is slowed down.

"The finer the yarn, the more it is damaged. Increasing the pressure on the rolls did not seem to lessen the sticking to the cylinder."

Mill H—"After buffing our rubber-covered rolls, we have noticed that the size pickup is higher than with wool-covered rolls. We think that the rubber rolls give a more-even application of size and fewer stuck ends.

"With more size pickup, there is a tendency to have just slightly more shedding and sticking to cylinders. No comparison on weaving efficiency is available."

Mill K-1—"We use rubber rolls altogether now. They seem to do a more-uniform dressing job from set to set, and we have no trouble with roll marks such as the lap of a blanket will cause. Weaving efficiency is about the same."

Mills Like Pneumatic Presser Roll

Only three mills reported on the use of hydraulic and pneumatic presser rolls. Their findings were:

Mill C—"We find the pneumatic lift and pressure control very satisfactory. It gives us more-uniform warps and therefore better weaving efficiency."

Mill E—"We have hydraulic-pressure squeeze rollers. We feel that we get a more-uniform sized warp and a little less shedding."

Mill K-1—"We have one slasher with a pneumatic presser roll. We get a firmer beam and more yards per loom without increasing the tension of the beam drive."

Negative Report on Overwaxers

Only two mills reported that they are using overwaxers. Several reported unsatisfactory results and discontinuance of overwaxing. One mill was able to lower relative humidity 6% in the weave room by using an overwaxer. Also, there was less shedding and looms were easier to clean.

Another mill uses an overwaxer on sheeting. It has no figures to show the effect on weaving. It believes some benefits are partly hidden, such as lubrication of reeds and heddles.

The question of cylinder vs. hot-air dryers drew this response:

Mill B—"From the standpoint of production, quality, and maintenance, there was very little difference. Our main reason for purchasing a multi-can dryer was for slashing synthetics yarn. With frequent changes in the cloth market, we think it is wiser to purchase equipment that will process synthetics as well as cottons."

Warps Are Straighter

The users of full-width portable tying machines all reported satisfactory results. They also cited advantages of portable warp tying over stationary machines.

Mill C—"We have three portable tying machines that tie the full width of the warp. They are all doing an excellent job. We think that portable machines are more desirable than stationary machines because we have loom beams with 32-in. heads on 44-in. looms.

"When full, the beams weight 1,100 to 1,200 lbs., and the patterns weigh 100 lbs. or more. Both are difficult to handle on account of the weight. We also think we get a straighter warp and fewer tangled drop wires.

"The reeds stay in line better by remaining on the loom. On our smaller beams, we use a stationary machine."

Mill E—"We have discontinued stationary tying for the following reasons:

"1. It is far more expensive.

"2. We have less damage to the patterns, harnesses, drop wires, reeds, etc. with the portable machine.

"3. We have also reduced our downtime at warp-outs by one-half."

Mill L—"1. With an end-to-end lease, you can get better tied warps with one loading.

"2. We think you get longer wear from reeds than you would by changing them on each warp-out.

"3. Longer shuttle life and less harness changing make it better on your loomfixer."

Big Beams Are Discussed

Two mills reported experience with warper beams with heads in excess of 36-in. dia.

Mill N—"We have not encountered any disadvantages."

Mill O—"The only disadvantages we have encountered in using 38-in. section beams is the fact that the yardage of one set is so large that an excessive number of loom beams is used up whenever a set is slashed.

"This is no problem if a mill is running only a few constructions, but a mill that weaves many styles loses a certain amount of its flexibility by going to the large-diameter beam heads.

"However, we think that this disadvantage is far outweighed by the many economies inherent in the use of large beam heads."

JAMES H. BLORE (left), associate editor, TEXTILE WORLD, is caught by a passing photographer in a finger-pointing exhibition with J. A. Wagstaff, Supreme Knitting Machine Co.'s English representative, at the Leicester Show.

New Equipment Shown at the Leicester KNITTING SHOW

The 1956 International Knitting Machinery Exhibition was held at Leicester, England, Oct. 17-27. The 167 exhibitors from nine countries showed their latest equipment for—

- Hosiery
- Underwear
- Outerwear
- Tricot and raschel
- Yarn preparation
- Dyeing and finishing

By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

In a Nutshell

Trends toward American production methods were evident at the booths of many British and continental machine builders. Machines incorporated many labor-saving devices to reduce operators' work and to increase work assignments.

Most women's seamless-hosiery machines shown had some tension device to draw off the stockings. Some two-feed machines had gadgets to cover the hole made when the second feed is withdrawn at the heel. An American machine had a length-control device to keep lengths within a ¼-in. tolerance.

Men's-hosiery machines were dominated by double-cylinder models, and three-feed jacquard machines were shown by three different builders. All three machines were knitting stretch yarns.

Interlock machines were fitted with more feeds than usual. Machines with 30-in.-dia. cylinders had 44 feeds. One machine had an air tube to each yarn carrier, and many machines had automatic oiling devices and conical yarn-feed wheels.

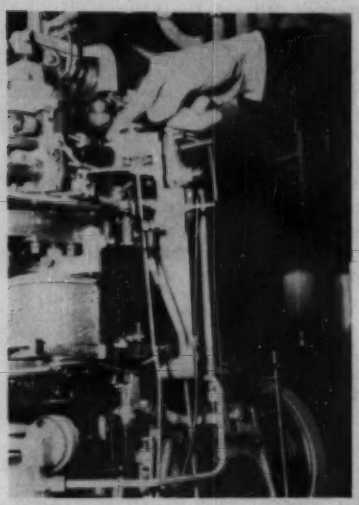
Circular outerwear machines also had more feeds, and they were more versatile. Interlock, jersey, and transfer stitch were made on the same machine. Many machines were running high-bulk Orlon. An increased interest was shown in pile fabrics. One American machine now knits pile fabric with a patterned face.

Tricot machines on show were faster than ever. Spring-needle machines, 84 ins. wide, were running as fast as 1,250 rpm.; while a 168-in. F.N.F. machine was running at 1,000 rpm. Builders of these machines emphasized that the machines were running unthrown yarns.

Raschel machines were also faster, and they have more bars to make more fancy lace.

Stretch-yarn machines were running as high as 70,000-rpm. spindle speed. One machine was a double-deck unit. Twisting machines are following the trend toward larger packages.

The trend in dyeing and finishing equipment is toward the solution of dyeing the new synthetic materials and toward greater automation in dyeing and finishing processes. High-pressure and high-temperature machines were evident.



Women's Hosiery Machine

The Model-K hosiery machine, shown by Scott & Williams, Inc., Laconia, N. H., featured an automatic length-control attachment.

The outward position of the sinkers is controlled by the tension on the yarn. If the tension is tight, the sinkers are moved out and they move a lever to change the air flow in a chamber supplied by compressed air. The changed air flow operates a hydraulic valve to regulate the cylinder and maintain an even length of stitch. (A-1)

Seamless-Hosiery Machine

Carolina Knitting Machine Corp., Charlotte, N. C., showed Model K2FS, a 500-needle double-feed micromesh machine with complete electrical stop motions above and below the bed plate.

The machine is fitted with a vacuum-type take-up to insure a constant tension on the stocking. A turbine supplies the vacuum to a plastic box. A new attachment eliminates pin holes. The double feed goes in and out by cam control for 10 needles. (A-2)

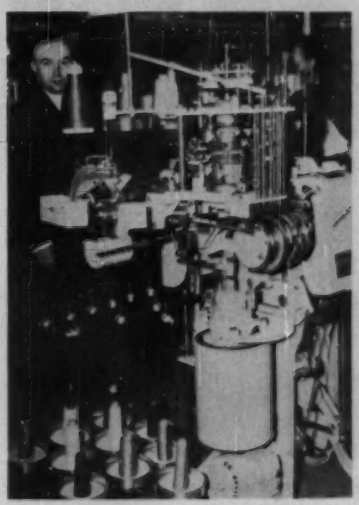
Seamless-Hosiery Machines

Fidelity Machine Co., Inc., Philadelphia, Pa., showed three electronically controlled 400-needle seamless-hosiery machines. One machine was a double-feed machine. The machines are equipped with an automatic tension device to withdraw the stocking from the cylinder as it is knitted. (A-3)

Women's Hosiery Machine

Bentley Engineering Co. Ltd., Leicester, England, showed Model KL, a double-feed seamless-hosiery machine with 400 needles, running at 185 rpm.

Brushes inside the cylinder are cammed down to apply tension to the fabric to eliminate crow feet and tucks. When yarns are introduced or taken out at the auxiliary feed, the first and third needles to take the yarn have long latches; and they tie the yarn in to eliminate the hole at the join. (A-4)



Automatic Knot Tier

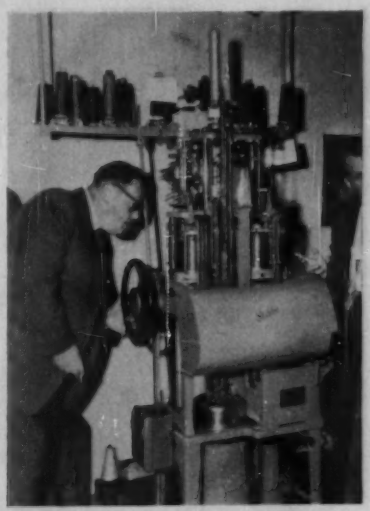
Model BR, shown by Bentley Engineering Co. Ltd.,, Leicester, England, was equipped with a ten-color knot tier to make a sock with 12 colors.

There are five yarn fingers on the front feed and two on the back feed controlled from the back chain. The machine runs at 185 rpm., but it slows down to tie knots. The machine was running on 2/100-den. stretch yarn. (A-5)

Hosiery-Boarding Machine

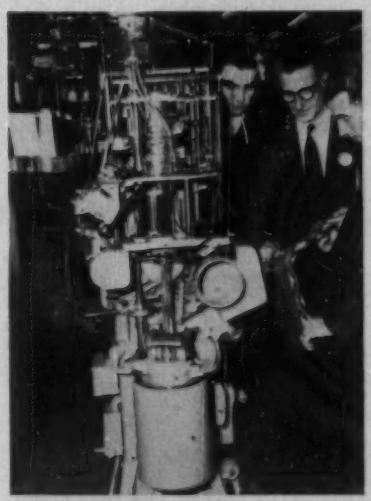
Postboarder 54, shown by Bellfour Gessellschaft Fur, Hagen-Haspe, Germany, is for preboarding, finish boarding, and postboarding socks and stockings. Two operators process 250 doz. stockings per 8-hr. shift, or 300 doz. socks per 8-hr. shift.

The stockings are treated with saturated steam, and they are dried as they leave the autoclave. The cycle is automatically controlled. (A-6)



Three-Feed Hosiery Machine

A three-feed double-cylinder hosiery machine for producing men's socks in jacquard and links-links stitch was shown by G. Stibbe & Co. Ltd., Leicester, England. The 168x4-in. machine was knitting 2/60-den. stretch yarn. (A-7)



Jacquard Hosiery Machine

Komet TJ, shown by Bentley Engineering Co. Ltd., Leicester, England, is a three-feed double-cylinder hosiery machine. Knitting 2/100-den. stretch yarn at 125 rpm., a 176x4-in. machine makes 27 doz. socks each 40 hrs.

There is a five-color striper at the front feed. The pattern mechanism is 26 selectors high with 48 racks. Each feed has a pattern drum. The foot bottom is made solid color in 1x1 rib. (A-8)

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For more information, circle the A-number on Reader-Service post card

Interlock Machine

Mellor Bromley & Co. Ltd., Leicester, England, showed Model I M, an 18-in.-dia. interlock machine with 18 feeds.

James H. Blore (left), associate editor, TEXTILE WORLD inquires about the compressor unit, which supplies air to a lint remover. This air is piped through plastic tubes to each yarn carrier. A flexible pipe is plugged into the system for general lint removal. Compressed air also enters the lubricating-oil reservoir and the needle-oil reservoir to constantly lubricate all moving parts.

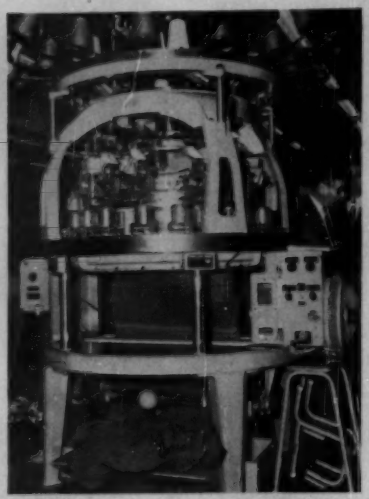
Furnishing wheels on the dial drive bracket have micrometer adjustments. (A-9)

Fleece Machine

Model TIF, shown by Supreme Knitting Machine Co., Inc., Brooklyn, N. Y., was knitting a fabric with a patterned face and a fleecy back. The machine has 28 feeds to knit 7 courses per revolution, and it knits up to 28 yds. of fleecy fabric per hour. Mac Thal, president, Alamac Knitting Mills, discusses the machine's potentialities with Supreme's Harry Strasberg. (A-10)

Fleece Machine

Emavit 22, shown by Lebocey Machines, Troyes, France, is a 24-feed machine for making fleece fabrics. Spring needles are used, and eight knitted courses are made each revolution. A 16-cut machine produces 16 lbs. per hour. A conical feed-wheel yarn-delivery system supplies constant tension on the yarn, which is controlled by the number of wraps around the cone. (A-11)



Sweater Machine

Model JTR, shown by Wildt & Co. Ltd., Leicester, England, is a 32-in.-dia. fully automatic sweater machine with 12 feeds. The machine was knitting 20s Orlon at 13 rpm.

Two garment widths or six sleeves can be cut from a fabric width. Four-color stripers are fitted, and the machine produces 2x2 and 1x1 rib bottoms with jacquard, interlock, and transfer-stitch designs. (A-12)

Flat Machine

The Automatic C flat machine shown by Hertel & Ritcher GmbH. & Co., Kiel-Dietrichsdorf, Salzredder, Germany, has electrically controlled knitting movements.

The yarn carriers, cams, tensions, racking, and speeds are controlled from a film. Electrical contact is made when the brush falls through the hole in the card to make contact on the brass roller. Cams are lifted by electromagnets. A device is installed that slows the machine when knots are pulled from the cone. (A-13)

Pattern-Wheel Machine

Emavit 33, shown by Lebocey Machines, Troyes, France, is specially designed for laid-in cloth, fleece, and jacquard patterns. The pattern wheels are driven by a gear wheel, and they are kept in time by a stud that locks in a hole on the wheel. Two plates are used in the wheel; one for tuck and one for knitted stitches.

Designs can be changed in 30 min. (A-14)

Sweater Machine

Jacquard Knitting Machine Co., Inc., Philadelphia, Pa., showed Model TAI-24, a 24-feed circular machine with a 32-in.-dia. cylinder. The 16½-cut machine was knitting 1/30s high-bulk Orlon interlock sweaters with 2x2 rib cuff. The machine also makes jersey bodies with 2x2, 2x1, or 1x1 rib cuffs. (A-15)

Full-Fashioned Sweater Machine

The 21-gauge full-fashioned sweater machine shown by William Cotton Ltd., Longhborough, England, knitted 2/20s high-bulk Orlon at 70 courses per minute.

The machine has an automatic rib transfer and semiautomatic welt turner. The welt turner can be changed over in 10 secs. by changing the control knob. There is three-color yarn striping, and the machine narrows to eight needles at high speed.

About 2 doz. short-sleeve sweaters are made hourly on a 12-section machine. (A-16)

For more information, circle the A-number on Reader-Service post card.

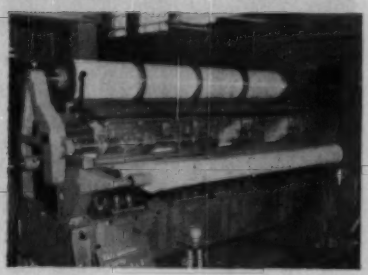
Full-Fashioned Sweater Machine

The 21-gauge full-fashioned sweater machine shown by S. A. Monk Ltd., Sutton-in-Ashfield, England, was running at 90 courses per min. on 2/24s Botany yarn.

The eight-section machine has 30-in. needle bars, automatic rib transfer, and automatic rib delivery. One operator sits at one end of the machine running on ribs on point bars, which are placed on a carrier track to be delivered to the knitting heads. There is 10 secs. downtime between sets, and one machine produces more than 1 doz. V-neck sweaters per hour.(A-17)

CONTINUED ON PAGE 170

Tricot & Raschel



High-Speed Tricot Machine

An 84-in. tricot machine shown by Karl Mayer GmbH., Obertshausen Germany, knitted jersey from 40-den. unthrown nylon yarn at 1,250 courses per minute. Selvage edges are controlled by five spiked wheels that hold the fabric. (A-18)

Tricot Machine

The Saupe two-bar tricot machine shown by Liba Maschinenfabrik GmbH., Naila Bayern, Germany, operated at 900 courses per minute on 30-den. unthrown nylon.

The yarn feed from the beams operates through the tension bar through auxiliary motors. The blind lap device is electrically operated, and the guide shogging motion works directly without an intermediate lever. (A-19)

Raschel Machine

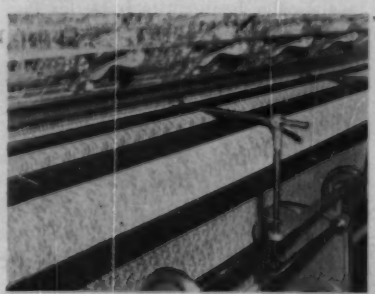
The Model-E raschel machine, shown by Kidde Mfg. Co., Bloomfield, N. J., operated at 310 courses per minute on a 10-bar nylon lace fabric. The machine uses a profile link for the stitch pattern and a single normal link for the pattern chains. A hydraulically damped shifter-box movement reduces shock. (A-20)

Four-Bar Tricot Machine

The rapid four-bar tricot machine shown by Liba Maschinenfabrik GmbH., Naila Bayern, Germany, was running at 380 courses per minute and knitting 30- and 15-den. nylon fancy pleated fabric. A switch connected to a roller on the pattern chain stops the beam feeding when pleats are made. The beam drives are connected to auxiliary motors. (A-21)

Raschel Machine

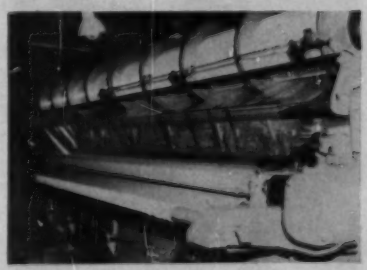
A 12-bar raschel machine shown by Karl Mayer GmbH., Obertshausen, Germany, was knitting lace ribbon at 400 courses per minute. The 1,650 double links were run from a special stand. The guide-bar lever oscillated to multiply the height of the link and to smooth the action. (A-22)



Raschel Machine

J. Hobley & Co. Ltd., Leicester, England, showed an eight-guide-bar raschel machine knitting lace with metallic threads at 150 courses per minute. The yarns were nylon, acetate, and Lurex.

The machine has a double pattern drum; one drum knits the ground fabric, while the other drum knits the pattern at half speed. (A-23)



Tricot Machine

The F. N. F. 168-in. machine, made by F. N. F. Machinery Mfg. Co. Ltd., was running at 1,000 courses per minute on 30-den. unthrown semi-dull nylon.

The runner indicator on the deflector bar allows runners to be checked without stopping the machine. An electromagnetic inking device marks the yarn at every one-eighth rack on the top and bottom runner. A light flashes when the yarn is marked. An indicator screen is moved to the required postion for the correct runners. (A-24)

Cut-Presser Tricot Machine

Wilhelm Barfuss GmbH., Wilhelmshaven, Germany, showed a 12-gauge tricot machine with three cut pressers. There are three auxiliary pattern chains for the pressers that shog sidewise and a chain for knock-off laps. There are two guide bars, and

CONTINUED ON PAGE 170

For more information, circle the A-number on Reader-Service post card.

Winding Machine

The Muschamp Autoconer winder, made by Muschamp Textile Machinery Ltd., Oldham, England, was winding miniature cones for placing in a portable creel for raschel warping or for sample weaving. The creels can be stacked and beams made directly from these creels. (A-25)

Stretch-Yarn Machine

Sydney & E. Scragg Ltd., Macclesfield, England, showed the Falspin crimped-yarn machine running at 40,000-rpm. spindle speed on 70-den. nylon.

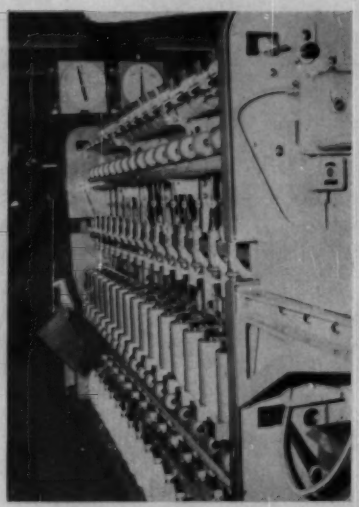
The machine is a 15-ft.-long double-deck machine with 116 spindles. There is one contact heater over each spindle. The units are self-contained. Each unit has a yarn-feed package carrier, heater device, twisting spindle with individual stop-and-start control lever, and a device to lift the yarn from the heated surface for threading.

Twist gearing can be arranged to provide twists from 4 to 84 tpi. (A-26)

Rubber-Covering Machine

A rubber-covering machine shown by Fabrique de Machines a Tricoter de Schaffhouse, Schaffhouse, Switzerland, has 40 spindles. The raw rubber is fed up through a feed wheel and through the hollow covering-yarn spindle.

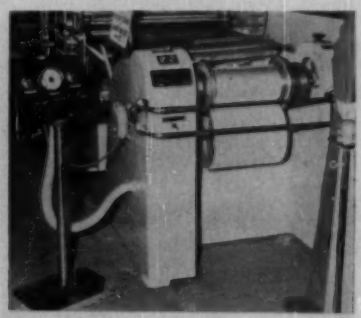
The spindle speed is 7,000 to 9,000 rpm., and the traverse is 2¾ ins. There are two decks, and the upper and lower spindles are driven by nylon belts. The covering threads may be cotton, rayon, or nylon. (A-27)



Stretch-Yarn Machine

The crimp twisting machine shown by Ernest Scragg & Sons Ltd., Macclesfield, England, was running at a spindle speed of 70,000 rpm. on 30-den. stretch yarn.

Individual heater boxes are coupled to a master heater. Each heater box in turn is recorded on a master clock, and a second clock records the temperature of that heater to maintain a temperature within 2° F. Overfeed rolls are fitted to give up to 10% overfeed in 1% stages. (A-29)



High-Speed Warper

Crowther Ltd., Thurmaston, Leicester, England, showed a high-speed warper with an automatic elevator yarn-storage device for backing up the warp.

The device is driven by a small motor, and it runs back automatically to its original position. The electronically controlled drive guarantees a constant yarn speed to ±1% and gives even starts from 0 to 600 yds. per min. The section beamer takes up to 21-in. flanges. (A-31)

Uptwister

A four-deck uptwister shown by Ernest Scragg & Sons Ltd., Macclesfield, England, has a movable trolley for easy working, and it can be used for a straight cheese package or a bobbin take-up.

The bottom and third deck are built level, and the second and fourth deck are built back. The spindle speed is 12,000 rpm. One motor drives two decks, and the two top decks can produce different yarns to the two bottom decks. (A-28)

Ring Doubler

The Atlas ring doubler, shown by Sydney & E. Scragg Ltd., Macclesfield, England, was running 1,620-den. rayon tire cord on 9-lb. packages at 4,500-rpm. spindle speed.

The doubler has 7-in. rings and a 9½-in. lift with a constant balloon feed. The belt-driven spindles remain concentric with the ring. The feed wheels stop when the yarn breaks.

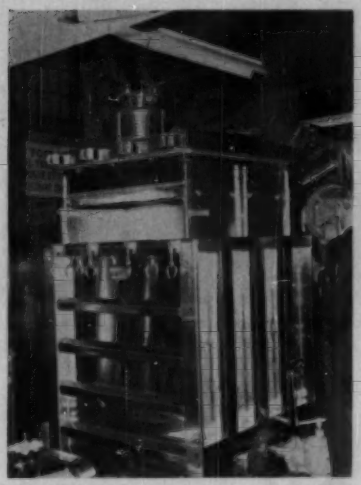
Bottle-bobbin, double-taper, or parallel-wind packages are made on the machine. (A-30)

Yarn-Stretching Machine

A nylon setting machine for sewing threads and tire cords was shown by Bates Textile Machine Co. Ltd., Leicester, England.

Yarn is run over feed rolls that are governed by a gear box to give 0 to 30% stretch. The yarn is stretched or shrunk when it passes through metal balls heated by electric elements. Yarn speed is up to 40 yds. per min. (A-32)

For more information, circle the A-number on Reader-Service post card.

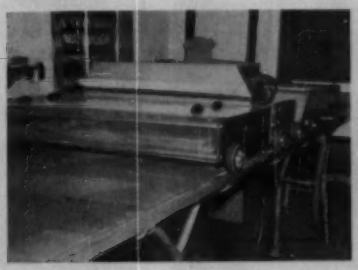


Hank-Dyeing Machine

The high-pressure hank-dyeing machine shown by Samuel Pegg & Sons Ltd., Leicester, England, is for wool and synthetics.

The maximum temperature is 216° F. and the capacity up to 200 lbs. The hank poles are in the top and bottom position. The heating is indirect by closed coils with a floor-circulation system.

There is no propellor compartment; the yarn occupies all the space. The liquor is circulated down one side and up the other, and the tank is split in two. (A-33)



Flock-Printing Machine

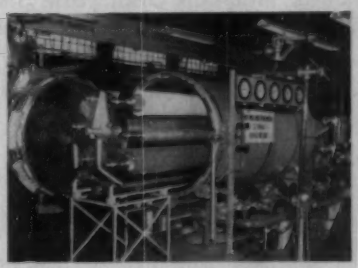
The flock-printing machine shown by Fritz Hofer, Olten, Switzerland, uses 50,000 v. at a low amperage for safety purposes to charge rayon and nylon flocks. The equipment is used for tricot and other knitted fabrics.

The fabric is laid on the table and treated with adhesive. The flock is applied and then dried with infrared rays, which are cut out when they are not in use. (A-35)

Pleating Machine

Karl Rabofsky GmbH., Berlin, Germany, showed a permanent-pleating machine processing 100% synthetics and fabrics with 50% synthetics that can be washed and dry-cleaned.

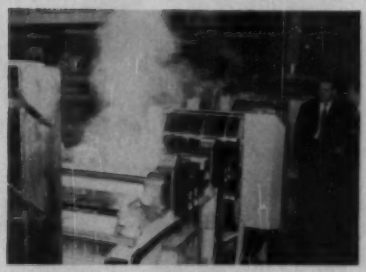
The machine is 60 ins. wide, and the production is 50 to 100 yds. per hr. Many different designs are made by arranging springs on a jacquard drum. This jacquard drum lifts various levers to raise the fabric, which is treated at 250° C. (A-38)



High-Pressure Dyeing Machine

Bellfour Gesellschaft Fur, Hagen-Haspe, Germany, showed a high-pressure dyeing machine for tricot, woven fabrics, and yarn on bobbins or cones.

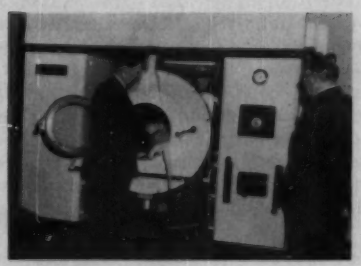
Dyeing is done up to 289° F. according to the dyestuffs used. A sampling tank is switched parallel to the main bath flow. From 66 to 318 yds. of fabric can be wound on one beam. One cycle for washing, rinsing, dyeing, and a further rinsing takes up to 120 mins. There are six beams. (A-36)



Ribbon-Dyeing Machine

A ribbon-dyeing machine demonstrated by Bates Textile Machine Co. Ltd., Leicester, England, was continuously dyeing red and blue ribbon at the same time.

The scour and dyebaths are electrically heated, and the ribbon is continuously dried and calendered. The production on rayon ribbons is up to 60 ft. per min. (A-39)



Dry-Cleaning Machine

The S75 dry-cleaning machine shown by Thomas Broadbent & Sons Ltd., Huddersfield, England, has a capacity of 33 lbs. and a monel screen tubular filter suitable for the charged soap system.

The extraction speed of 720 rpm. has been calculated to give solvent economy without cracking or breaking garments. The machine stops in 20 secs. (A-34)

Sueding Machine

Johannes Menschner, Dulken-Rhld., Germany, showed the WIS 1600 sueding machine, which is suited for tricot fabrics.

The machine has five rollers; and the material speed is from 9 to 16 yds. per min. for cotton and synthetics fabrics up to 63 ins. wide. There is a dust collector inside the machine. A suede effect is obtained with three to six passages though the machine. (A-37)

Absorbent Machine

An absorbent machine was shown by Bates Textile Machine Co. Ltd., Leicester, England.

Fabric is passed over feed rolls into a tank that contains boiling water. As the fabric is lifted from the bath, it passes over carbon electrodes that heat the water in the fabric. The fabric emerges through nip rollers that partially dry the fabric. (A-40)

For more information, circle the A-number on Reader-Service post card.

ORLON TOW is broken into 8-in. staple. Automatic controls keep the heat-setting temperature to 280° F.

ELECTRONIC EYE (arrow) between the cans and the fallers stops the machine when an end breaks or runs out.

New Ideas Help Make Better HIGH-BULK ORLON

At Marshall Spinning Corp., high-bulk Orlon yarns are spun on the American system. Modifications that are helping to produce better-quality yarns include—

- **Positive temperature controls on the stapler**
- **Electronic-eye stop motions on reducers**
- **Bridges on reducers to convey sliver**

By JAMES H. BLORE, Associate Editor, TEXTILE WORLD

NEW FIBERS mean new methods and new machines. When high-bulk Orlon yarns became popular for knitwear, Walter Marshall Spinning Corp. of R. I., Thornton, R. I., put in a lot of new equipment. Today, most of the machinery in use is less than three years old.

Some of the machinery has been modified by the mill to give better controls and to make top-quality yarns. A typical example of these ideas has been an addition to the Turbo stapler, which is the first machine to process the Orlon tow.

Heat Is Controlled to ± 2° F.

Exact control of temperature is important when Orlon is stretched, and a Fenwal automatic control on the stapler keeps the temperature in the heater box to 280° F. ±2° F. The controls are on the frame over the delivery rolls within constant view of the operator.

The stapler stretches the 3- and 6-den. tow and breaks it to an 8-in. staple. A fan cools the exit rolls as the tow emerges from the heater box. Hourly production of the staple is about 80 lbs. per hour.

The sliver is crimped as it leaves the machine, and 60% of the sliver is fed into aluminum cans and treated in a Turbo steam box for 20 mins. to relax the fibers.

Four cans of relaxed fiber and four cans of unrelaxed fiber are then put to the back of a Hood stapler. At this operation, the fibers begin to be blended, and they are reduced to a 6-in. staple.

An intersecting balling box then processes the blended material directly to the cans. Five ends are fed to each head to make 12-lb. balls.

An electronic eye is positioned across the ends of sliver between the cans and the fallers. If an end comes down or runs out, the free end drops through the beam of the electronic eye and shuts off the machine.

Each ball of sliver is weighed as it leaves the machine. The acceptance limit is 4 oz. each way on a 12-lb. ball. If the weighing shows that the ball is out of the acceptance limits, the material is rerun.

Nine balls of sliver are put up at the back of the first Holdsworth gill reducer for 2/32s yarn, and three ends are delivered into cans.

Each can has a colored band around the top, and 18 cans are put to the back of a second gill reducer. The material from this operation is delivered in three cans.

Each can contains the same length of sliver, and each can is weighed. If the weight is 8 oz. above or 8 oz. below the standard, the material goes back to the first operation to be reprocessed.

The weight of sliver is chalked on the can, and the weights are leveled by putting minus weights with the same number of plus weights. This material then goes through the final gilling operation, where 12 slivers are run through a six-delivery gill reducer. Nearly 100 lbs. of material are processed per hour. The sliver at this stage weighs 32 grains per yard.

Bridges Support Sliver

Bridges made from strips of Masonite allow a smoother delivery from the cans to the reducers. The bridges support the sliver and do not let it sag. Strips of flexible material are fastened to the tops of the sliver can in the form of a folding handle to keep the sliver under control when the cans are full.

BLENDED SLIVER is supported by the bridges on the gill reducers. Weights of the cans are kept leveled.

ROVING is doffed at 2-hr. intervals. The 10x5-in. bobbins are placed in trucks that hold a complete doff.

Flyer speed is kept to 935 rpm. on the Saco-Lowell F-5 roving frames, and the roving is wound on 10x5-in. bobbins. About 2 hrs. are needed to put 1 lb. of roving, which now weighs 138 grains per 40 yds., on each bobbin.

The roving is doffed in special trucks that are pushed down the aisles. The trucks hold a complete doff, and the bobbins are stacked neatly on the truck.

Flyers are wiped down at each doff to remove lint once each day. Each frame is cleaned down once every day with a solvent to remove corrosion from the lifter board.

Aluminum tubes, supported on racks screwed to the back of the roving frames, run the length of the frames. The sliver is run over this tube to impart a more-even and direct pull from the sliver cans.

Yarn Is Spun on 10½-in. Tubes

Saco-Lowell 100-spindle SS4 spinning frames process the roving. Two ends are fed to each spindle. About 5½ oz. of yarn is spun on each of the 10½-in. paper tubes at a spindle speed of 5,500 to 6,000 rpm. The size of the yarn ranges from 16s to 32s.

These frames are being equipped with ball-bearing front rolls and Dayco cots. Waste is cleaned from the clearers at the change of each yarn lot. Roll pickers are used constantly to remove lint from the rolls.

Lint is removed from the pigtail board with a flat cleaner made from plywood. A piece of felt is glued to the plywood, and the cleaner is pushed along the board.

The yarn is then wound from the spinning bobbins on Abbott and Foster winders. The slub catchers on these winders are set to the size of the yarn, and the settings are checked twice daily with feeler gauges by the section hand. The yarn runs through a special wax at 500 yds. per min.

SPINNING FRAMES are kept free from lint. A cleaner made from felt-covered plywood keeps the pigtail board clean.

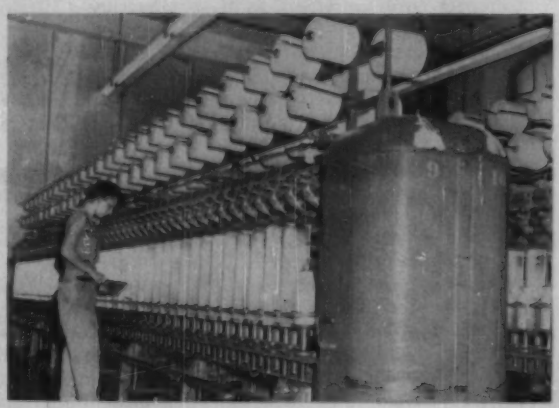
Twisting Done From 4-lb. Spools

The cones made in this operation are taken to a Foster 57 doubler, where two ends of yarn are run together for twisting. The doubled yarn is wound on 4-lb. spools.

About 90% of Marshall's high-bulk yarns are two ply. Twisting is done on Universal Atwood twisters with 4¼-in. Albrecht rings. The spindles of these 6-in. pitch frames run at 6,700 rpm. There are 4¾ tpi. put in 2/26s high-bulk yarns.

Yarn from the taper-top twister bobbins is then wound on skeins or cones. Most yarn is wound into skeins weighing 3 to 3½ oz. for dyeing. The remainder is wound on 3-lb. cones.

Most of this yarn goes into sweaters and children's wear. Additional machinery for bulky-knit sweater yarns is being installed.



TWISTING is done from 4-lb. spools on 4¼-in. ring Universal twisters. The spindle speed is 6,700 rpm.

Easy Way To Calculate YARN DIAMETER

- A basic knowledge of yarn diameters is essential to determine the proper size of warp and filling yarns needed to weave good cloth. Otherwise, a boardy or sleazy fabric may be produced.

- Here's a simplified method of calculating yarn diameters without the use of instruments. At the same time, the formula shows the maximum number of ends of a specific size that can be placed side by side in 1 in. of lateral space.

By B. L. WHITTIER and SHRI MAVLANKAR

A FABRIC ENGINEER is expected to select suitable weaves and yarns and use them in the proper combination to produce a cloth with certain desired properties. A basic knowledge of yarn diameters is necessary to determine the size of the warp and filling yarns needed.

Accurate determination of yarn diameter is not an easy task. First, an assumption has to be made that the yarn is cylindrical in shape. Second, the amount of twist has an effect on the diameter of yarn. The various processes, including weaving, alter the initial diameter of yarn. The size and shape of the individual fibers and the moisture content affect the density and diameter of the yarn.

If the diameter of a yarn is known, it is easy to compute the number of ends that can be placed side by side in a lateral plane. Usually, this factor is expressed in terms of the number of ends or picks per inch of fabric.

"Compact Cover" Is Defined

The term "compact cover" will be used to express the maximum number of yarns of a specific size that can be placed side by side in 1 in. of space without compression. The term "compact-cover factor" will refer to the maximum number of 1s cotton-yarn ends that can be placed in 1 in. of space.

Ashenhurst's rule for determining these factors can be expressed substantially as follows:

Compact cover = $\sqrt{840 \times N}$ − allowance (7% for cotton)

Compact-cover factor for cotton yarn = 27

Where: N = yarn number

Frederick Peirce advises the use of a conventional cotton-yarn diameter of 0.0358 in. for 1s. This diameter gives a compact-cover factor of 27.9.

J. B. Dickson, recognizing the need for more information about the diameter of yarns spun from fibers other than cotton, suggests the use of an "all-fiber system," based on a hypothetical fiber with a yarn density of 1.00 gram per cubic centimeter.

A study of the publications of Peirce and Dickson suggests the possibility of grouping fibers into three classes and the use of one compact-cover factor for each class. The factor would not apply to monofilament yarns that have the same density as the fiber from which they are made; nor should it be used for yarns made from very coarse fibers, such as 10 to 25 den. Within the common range of fiber size, however, the compact-cover factors suggested here should be reasonably safe for practical use.

Group Yarns in Classes

The majority of fibers presently used in making fabrics for apparel, household use, and industrial use in the United States have densities that fall within three general classifications:

Class I, density 1.50 to 1.55 grams per cubic centimeter—cotton, viscose, cupra, and Fortisan

Class II, density 1.31 to 1.38 grams per cubic centimeter—wool, acetate, Dynel, and Dacron

Class III, density 1.12 to 1.17 grams per cubic centimeter—nylon, Orlon, and Acrilan.

If the suggested compact-cover factors are used only as a basis for building, developing, or comparing a fabric, it should be safe to use one basic figure for each class of fiber density. In grams per cubic centimeter, the densities are: Class I, 1.50; Class II, 1.35; and Class III, 1.15.

Dickson assumes that yarns spun from other fibers have about the same degree of fiber packing as cotton yarns. On this assumption, compact-cover factors of 28, 26.5, and 24.5 for the three classes respectively, can be developed. Since these factors represent the number of compact ends per inch for 1s cotton yarn, it is simple to determine the compact cover for any other yarn size.

The diameter of a yarn varies inversely as the square root of the yarn number (in using an indirect system); and by using the reciprocal of the diameter, these simple

Compact Cover Compared With Dickson's Results

Yarn	Formula and compact cover	Dickson's numbers	Difference (%)
20s cotton	$28\sqrt{N} = 125.2$	125	−0.0
24s wool	$26.5\sqrt{N} = 129.7$	128.5	−0.92
24s Dacron	$26.5\sqrt{N} = 129.7$	131.4	+1.27
30s Orlon	$24.5\sqrt{N} = 134.0$	135.1	+0.82

Where: N = Yarn number (cotton system)

COMPACT-COVER FIGURES calculated by the new method compare favorably with Dickson's findings. The minor differences are caused by variations in twist, compression, and other distortions.

formulas are established to find compact cover:

$$\text{Class I} = 28\sqrt{N}$$
$$\text{Class II} = 26.5\sqrt{N}$$
$$\text{Class III} = 24.5\sqrt{N}$$

Where: N = yarn number

A comparison of the results obtained by this method with Dickson's compact-cover figures, shown in the table, should convince anyone that the method has practical application; but it should be remembered that the figures represent an approximation.

Packing Affects Density

Cotton fiber has a density of 1.50 grams per cubic centimeter. In a normal yarn, the fibers are not packed with 100% compactness; and the yarn density, or the bulk density of the cylindrical body of the yarn, will always be lower than the individual density of the fiber. This bulk density is dependent upon the degree of the packing of the fibers brought about by the turns per inch and other factors. If the fibers in a yarn were packed 100%, leaving no space or air pockets, as in a monofilament yarn, the yarn density would be the same as fiber density. This condition is seldom found. In the majority of yarns, a considerable part of the volume will be air space; Peirce found that 40% of the volume of cotton yarn is air space. He calculated on this basis that a normal cotton yarn has a density of 0.909 gram per cubic centimeter.

Some reference to fibers having densities that are different from cotton is necessary. Where the fineness of a fiber is well within the range of cotton-fiber fineness, it is safe to work out yarn density on the foregoing basis. But where the fiber is very coarse, a different allowance will have to made.

Calculate Yarn Diameter

It is relatively simple to calculate the diameter of any cotton yarn with an approximate density of 0.909 grams per cubic centimeter. The volume of 1 lb. of cotton in yarn form is readily obtained by dividing 1 lb. (453.59 grams) by the yarn density. Remembering that there are 840 yds. of cylindrical yarn in 1 lb. of 1s yarn, the area of the cross section can be calculated; and from this information, the radius and diameter are readily determined.

The diameter of 1s cotton yarn having 0.909-gram-per-cubic-centimeter density is 0.0358 in. As a fraction, this figure is approximately 1/28 in. Anyone familiar with Ashenhurst's rule will recognize that the figure is slightly different, but it is probably a more-accurate average diameter of a 1s cotton yarn in woven cloth.

To establish a relation between the basic diameter and the diameter of another number of cotton yarn, it is necessary to remember that the circular cross section of a yarn varies inversely as the yarn number. The diameter varies inversely as the square root of the yarn number.

If the diameter of 1s yarn is 0.0358 in., the diameter of any other cotton yarn can be found by dividing this number by the square root of the yarn number. For example, to find the diameter of 36s cotton yarn, the calculation is:

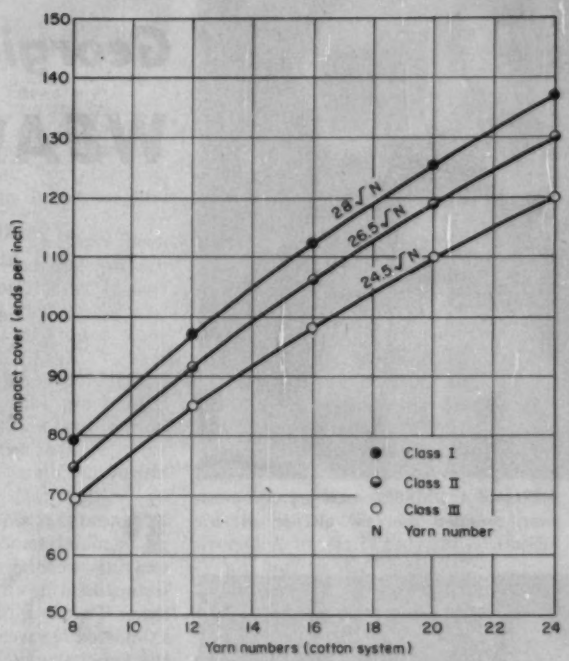
$$\frac{0.0358}{\sqrt{36}} = 0.00597 \text{ or } 1/168 \text{ in.}$$

The compact-cover factor for 1s yarn is:

$$\frac{1}{.0358} \text{ or } \frac{1}{\frac{1}{28}} = 28$$

Since the diameter of the cotton yarn number N is inversely proportionate to the diameter of 1s, it is possible to substitute and develop a formula:

$$\frac{1}{\frac{.0358}{\sqrt{N}}} \text{ or } \frac{1}{\frac{1}{28\sqrt{N}}} = 28\sqrt{N}$$



COMPACT COVER (ends per inch) shows an increasing spread as the yarns, 8s to 24s, grow finer. The densities shown are net after approximately 40% air space is discounted. Class I has a bulk density of 0.91 gram per cubic centimeter; Class II, 0.82 grams per cubic centimeter; and Class III, 0.70 grams per cubic centimeter. Similar charts can be plotted for other ranges of yarn numbers.

Problem: Calculate the number of strands of 36s cotton yarn that can be laid side by side in 1 in. of space.

Answer: $28\sqrt{36} = 168$ (compact cover)

Following these lines, it is possible to derive formulas for yarns made from fibers of any density. Again, it is necessary to assume that the yarn is cylindrical and will have the same degree of compactness as a cotton yarn. For example, the fiber density of spun saran is 1.70 and the bulk density is 1.02 grams per cubic centimeter. The diameter of 1s (cotton system) is 0.0336 in. Formula for saran's compact cover is:

$$\frac{1}{\frac{1}{29.7\sqrt{N}}} = 29.7\sqrt{N}$$

Where: N = yarn number (cotton system)

Effect of Fabric Geometry

From the compact cover, it is possible to estimate the limits of concentration of warp and filling in a particular cloth. In a plain square-weave cloth, the limits of concentration in each direction are generally taken as half the compact cover of the yarn.

These limits, however, can be modified in a number of ways. For instance, a plain-weave cloth of the rep or bengaline type can be made with as many as 168 ends of 36s cotton yarn and still have room for more filling yarn if practically all the bending of yarn occurs in the warp.

Georgia Mill Men Discuss WEAVING Problems

At its fall meeting at Georgia Tech, the Textile Operating Executives of Georgia elected new officers and held an open forum on weaving questions. Among the new items discussed were—

- **Plastic shuttles**
- **Loom blowers**
- **Link-type parallels**
- **Shuttle-tension testers**

HERMAN A. DICKERT, secretary and treasurer, presided over the election of new officers.

GEORGE D. MALONE led the weaving discussion. Plastic shuttles drew the most interest.

New officers were elected at the fall meeting of the Textile Operating Executives of Georgia at Georgia Tech. The new general chairman is Mac Issacs, superintendent of Anderson Mills, Columbus.

Clyde Cobb of Riegel Textile Corp., Trion, was elected vice general chairman; and Herman A. Dickert was reelected secretary and treasurer. Lee Winn of Canton Cotton Mills, Canton, and S. E. Murdoch of Eagle & Phenix, Columbus, were elected to serve on the executive committee.

PROBLEMS and processes of mill maintenance, slashing, and weaving were discussed in an open forum meeting in the Harrison Hightower Textile Building. Twenty mills submitted answers to all or part of the nine weaving questions raised.

The answers showed that Georgia mill men as a whole are interested in all new weaving developments but that most of them prefer trying anything new on a limited scale until it is proved best for their mills.

Nylon Loops in Shuttles

There was a difference of opinion about the advantages of nylon loops as a filling-tensioning device in shuttles. Of the 15 mills reporting, six had obtained satisfactory results, six had discontinued the use of nylon, and three were experimenting with it. Comments were:

Mill A—"Nylon loops have been used experimentally only and have not been adopted for general use."

Mill B—"In instances where the nose of the quill might have a tendency to rise in the shuttle, nylon loops work very satisfactorily in controlling tension; but the use of nylon has been discarded to a large degree because after a short time the yarn rubbing against the nylon would fray the nylon and eventually the filling yarn would be cut."

Mill C—"We do not use nylon in place of fur or bristle; our experience has been unsatisfactory."

Mill E—"Our experience with nylon monafilament replacing bristle and fur has not been satisfactory. Our quality has been lowered in that we had more mispicks and broken picks in the cloth with approximately 1% more loom stops."

Mill G—"We use nylon altogether on all our looms and find that we have far less kinky filling. Selvages are improved because we have approximately the same tension for the entire quill of filling. Nylon will last longer than bristles, and it is more economical to use."

Mill J—"This type of shuttle tension is still in the experimental stage with us. However, we find that the nylon loops will last longer than regular bristles. Also, we seem to have less pulled in or gappy selvages."

Mill K—"Our experience has been entirely satisfactory in using nylon to replace fur and bristles. We find that the life of the nylon loops is equally as good as fur, and the cost is only a fraction of what we paid for fur."

Plastic Shuttles Have Long Life

Most mills reporting experience with molded plastic shuttles were pleased with results, although some were still experimenting with them.

Mill B—"The plastic shuttles we are using have been very satisfactory, and we estimate that we get twice the life at twice the cost of the wooden shuttle. Although we plan to continue using the plastic shuttle on a larger basis, the only great advantage we can see at present is that fewer loom adjustments are needed on a new shuttle."

Mill K—"We have been experimenting for about a year with molded plastic shuttles, and our experience has been very good. These shuttles cost approximately twice as much as wooden shuttles, but the service life of plastic shuttles has been three or four times as long.

"In addition, we find that these shuttles do not chip as badly as wooden shuttles. They do not scar, and this feature reduces broken picks in our cloth."

Mill S—"Our experience with plastic and molded shuttles has been very encouraging. At present, we have approximately 800 looms using the molded shuttle and approximately 600

looms using bonded plastic shuttles.

"We are not yet ready to say which we like best, but we are convinced that both types are good. Our loomfixers like them. We first started using them on sample lots of 50 or more looms in January, 1954.

"It is still too early to give accurate figures on shuttle life; but from our results, we are sure that the service life will be four times that of dogwood shuttles. The cost of the molded shuttle is about twice that of the dogwood shuttle, and the cost of the bonded plastic shuttle is 61% more than the dogwood shuttle.

"Advantages are: less power on loom; longer life; no splintering; no polishing. Disadvantages are: harder to keep bristles in shuttle; seems to run hotter and cause leather to get hard."

Nylon Is Tried on Loop Selvages

Monofilament nylon instead of wire for use in weaving loop selvages was discussed; also problems of wire breakage after week-end shutdowns.

Mill D—"We have excessive breakage of wires on our loop selvage looms after week-end stops. We are trying to control this problem by a reduction of humidity over these looms on Monday mornings.

"We have tried nylon to replace our wires but found the nylon was subject to excessive wearing at the shuttle crossing and in the temple."

Mill G—"We have not noticed any excessive breakage of wires after a week-end stoppage.

"We used nylon instead of wire for a few days and found it satisfactory. The only drawback we found in using this nylon was that it would fray where the shuttle came in contact with it. It would not feed out as it should but would continue to go around the take-up roll until it was broken."

Mill K—"We have had a great deal of trouble in the past with broken wires after a week-end stoppage. We believe we have reduced this breakage to some extent by waiting until just before starting time to turn on the humidity in the weave room.

"The obvious advantage of using nylon over wire is the reduction of a bad accident hazard."

Mill K-1— "The only advantage we got out of synthetic material was longer life. We were able to get approximately 25% more life from synthetics.

"Our disadvantages were buttonhole selvages and cut selvages. We discontinued using synthetics except for experimental purposes."

Mill Q—"We encounter very little trouble on start-ups. Loops would not slip on synthetics."

Creeling Metallic Yarns

Only seven mills reported experience with metallic yarns. Questions dealt with method of creeling, method of drawing in drop wires, and weaving data.

Mill B—"Metallic yarns have been used on a very limited scale in our mill. We built a creel directly over the lease section of the slasher and wound the metallic yarn on a separate loom beam.

"This proved to be unsatisfactory; and on the second trial, we built a special creel in back of our cotton warper and warped the metallic yarns in the same manner we do our cotton yarns.

"The warp beams were then placed directly above the slasher's lease section, and the metallic ends were placed on the loom beam along with the cotton warp ends."

Mill I—"We use metallic yarn in several styles. This yarn is used in the warp with cotton to make decorative spots or stripes. We support 1/64-in. metallic yarn with a 70-den. strand of nylon on an uptwister.

"The spools from the uptwister are creeled onto a peg-board creel on the front of the slasher, and the ends are properly placed with cotton ends. It is put on the same beam with the cotton.

"If the metallic yarn has long floats in the fabric, we draw those ends through light drop wires and confine them to one electrode bar, usually the one nearest the harnesses. These ends are also confined to the front group of harnesses."

Limited Experience With Blowers

Only two mills reported experience with overhead loom blowers, and one used a ceiling blower.

Mill D—"A monorail overhead loom blower was tried for two weeks. The blower made a complete cycle every 2 1/2 mins. The relative-humidity standard was 88%. The blower did not keep the looms clean because of the high humidity and excessive shedding.

"We were unable to reduce our normal loom-cleaning schedule. In addition, the blower created undesirable air current that affected the humidity conditions around the looms. The blower also blew excessive lint into the warp, causing mat-ups and loom stops."

Mill L—"Our experience is very limited. No other cleaning is done except at warp-outs. We made no changes in humidity. Our room appearance is better."

Five mills gave their reactions to the link-type parallels; all but one reported only one loom equipped with this parallel. The other mill had four.

These parallels were all giving satisfactory service; improved paralleling of pickers and better boxing of the shuttles were given as major benefits.

Keep Take-Up Roll Level

Practically all mills reporting were of the opinion that keeping the take-up rolls level would help prevent big-end and telescoping cloth rolls.

Mill E—"Be sure the take-up roll is level. Keep the cloth-roll blocks in good condition and traverse rolls clean and horizontal. We have no difficulty with telescoping if these conditions prevail. Of course it is necessary to start the roll of cloth evenly and tightly."

Mill I—"On X-model looms, big-end rolls can be avoided if the following parts are aligned and leveled: drag rolls, vibrating roller, stop-motion girder, and take-up roll. Cloth-roll traverse arms must be set level so that the cloth roll will exert the same pressure against each end of the take-up roll. Temple rolls must be kept clean and free. The lay must travel the same distance to front on both sides."

Mill K—"We have had a lot of trouble with big-end rolls on our X-model looms. We have been experimenting with our take-ups by taking off the conventional double-spring wind-up and substituting the center-spring wind-up. To date, it appears that this practice has helped."

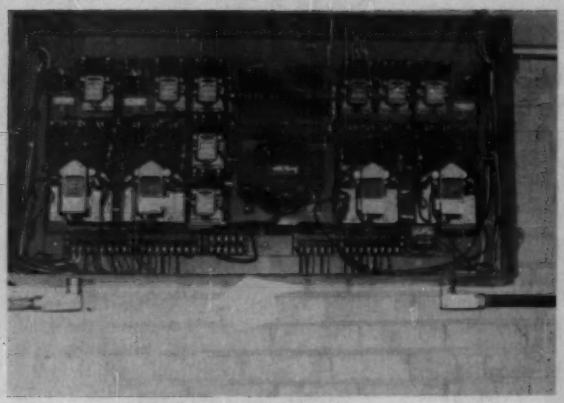
Mill T—"Big-end rolls are controlled by adjusting equally the tension on both ends of the roll; by proper settings, maintenance, and cleaning; and by oiling gears, bearings, and springs."

Testers Used for Filling Tension

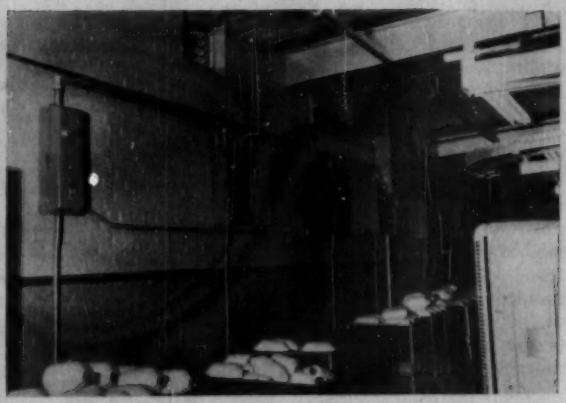
Some mills reported the use of tension testers for warp and filling. Most of the testing was done on an experimental basis. One mill reported warp-tension checking helped in getting harness and loom set to reduce tension on the warp yarn.

Another mill found filling-tension tests helpful in solving several problems. Mispicks, shade changes, and button-hole selvages were found to correlate closely with excessive shuttle tension.

Most mills reported that no changes were made in their shuttles in going to a larger filling package. One mill specified two bolts in the spring to keep it tight. All agreed that the heavier package called for closer maintenance of shuttle springs.



DYNAC UNIT is self-contained in a single cabinet. The door is closed during operation.



FOUR SPINNING FRAMES are braked by the one DynAC unit on the wall. Four starters are connected to the unit.

New ELECTRICAL BRAKES
Stop Spinning Frames Fast

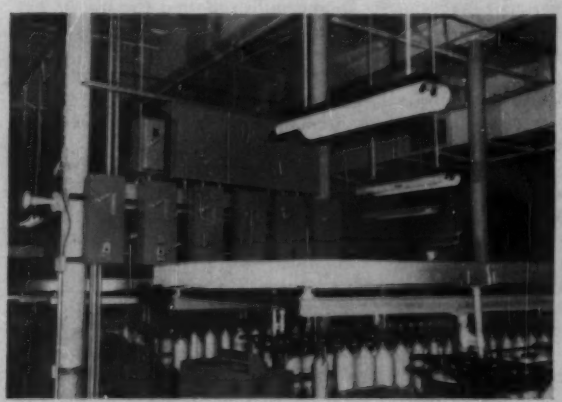
Electrical brakes are operating on 184 cotton spinning frames at Greenwood Mills. The brakes—

- Stop the frames quickly, smoothly, and positively
- Require only a little maintenance
- Cut power cost and frame downtime

By **W. L. BROSS**, Chief Engineer, Greenwood Mills, and
J. C. MAROUS, Consulting and Application Engineer, Westinghouse Electric Corp.

THE FIRST APPLICATION of Westinghouse Electric Corp.'s group electrical braking on cotton spinning frames is in operation at the Greenwood Plant, Greenwood Mills, Greenwood, S. C. Late last year, 184 spinning frames were being controlled by the electrical-braking units, called DynAC; and other units will be added.

No mechanical or electrical changes were made at the mill to provide for the DynAC installation. On one group of spinning frames, one DynAC unit brakes four spinning frames; on



SIX SPINNING FRAMES are controlled by this DynAC unit mounted over the individual starters.

START-STOP SWITCH is the only electrical control at the spinning frame. Coauthor W. L. Bross is shown.

a second group, one DynAC unit brakes six frames. Individual braking controllers can be used, but group braking of several motors with one controller reduces the initial cost greatly.

The units vary in the number of frames they brake because the spinning-frame starters in the two groups are laid out in groups of four and six. A total of 112 frames is braked in groups of four; 76 are braked in groups of six.

Combination starters are installed separately in conjunction with the DynAC controller. The starters could also be included in the DynAC controller. The groups of four starters are on the walls of the building. The groups of six starters are mounted overhead throughout the spinning room between steel columns.

Units Fit Into Standard Layout

The DynAC units are shown in the photographs at the center of the starters. The starters were mounted in their present positions so that they could be reached easily for servicing them when the Pneumafil system was installed on the frames. This layout can be varied but is now standard grouping of starters at the mill. At present, the only electrical apparatus at the frames are small start-stop push buttons.

A general range of yarn numbers is run in the spinning room. Yarn is spun three ways: (1) on loom bobbins, (2) on warp-type packages to be rewound on filling bobbins at automatic winders, and (3) on regular warp packages. Yarn numbers range between 16s and 40s.

Spindle speeds are 9,000 to 10,500 rpm. Spindles vary from 320 to 400 per frame. All frames are Saco-Lowell.

The spinning-frame motors are 10 hp., 3 phase, 60 cycle, 550 v.

No trouble has been encountered in operating DynAC. Mill electricians service them as part of their jobs.

Braking Time Can Be Adjusted

Considerable experimenting has been done in adjusting the over-all braking time, which varies by the yarn being spun. Three different braking times are being used at present: 6, 8, and 10 secs. Frames spinning high-twist yarn of 30s and above are braked the fastest, in 6 secs.

The units were installed primarily to cut the maintenance cost of the existing mechanical-braking system, but yarn quality has been improved and spinning-room efficiency is higher.

The mechanical brakes were manufactured at Greenwood Mills and were installed when Pneumafil was installed.

CONTINUED ON PAGE 174

How ELECTRICAL BRAKING Operates on Spinning Frames

• Electrical braking is basically a system of stopping an a.c. motor by applying direct current to one phase of the motor. Here's how it works—

DYNAMIC BRAKING OF A.C. MOTORS is a special form of regenerative braking obtained by applying direct current to one phase of a motor, as shown in the accompanying sketch. As an example, consider a 4-pole 1,800-rpm. motor with a 60-cycle power source. If the power source is immediately changed to 50 cycles, the motor operates at 1,500 rpm.; this reduction in speed is figured from the known formula: Speed =

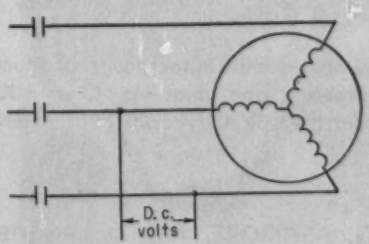
$$\frac{120 \times \text{frequency}}{\text{number of poles}}$$

If the frequency is changed to 30 cycles, the motor operates at 900 rpm. Therefore if the frequency is changed to zero cycles or direct current, the synchronous speed of the motor is zero. As a result, when direct current is applied to a motor that is running at full speed, it will brake the motor to zero speed.

Direct Current Stops the Motor

The application of direct current to two terminals of a three-phase induction motor sets up stationary magnetic poles around the stator periphery. When the motor is turning, the rotor bars cut the flux and a voltage is produced in a rotor.

The resulting rotor current acts with the flux to produce a retarding torque on the rotor, and the motor is braked to a stop. Under these conditions, the rotor current is alternating at a frequency depending upon the speed.



ELECTRICAL BRAKING is obtained by applying direct current to one phase of a motor.

Advantages on Spinning Frames

D.c. braking of a.c. motors of spinning frames has been successfully applied to several hundred spinning-frame motors the past two years.

The controller has been applied individually to spinning frames on synthetic fibers and high-twist cotton, where it serves its best purpose in preventing run-outs of the yarn.

D.c. braking has several advantages:

1. A constant degree of braking is provided at every stop without any adjustments. The brake is not affected by temperature, humidity, oil, and wear.

2. The maintenance cost of a d.c.-braking controller is negligible. In addition to a reduction in maintenance cost, there's less spinning-frame downtime because no braking maintenance is required.

3. Since the torque with d.c. braking drops off gradually near zero speed, it provides a cushion stop and eliminates even the slightest kink in the yarn.

4. The total power cost is reduced; only 21 w. are required to energize the braking transformer.

5. The degree of braking is easily adjusted over a wide range for various yarns, if needed. This adjustment is made by simply changing one lead of the transfer on a terminal.

Controller Brakes Several Frames

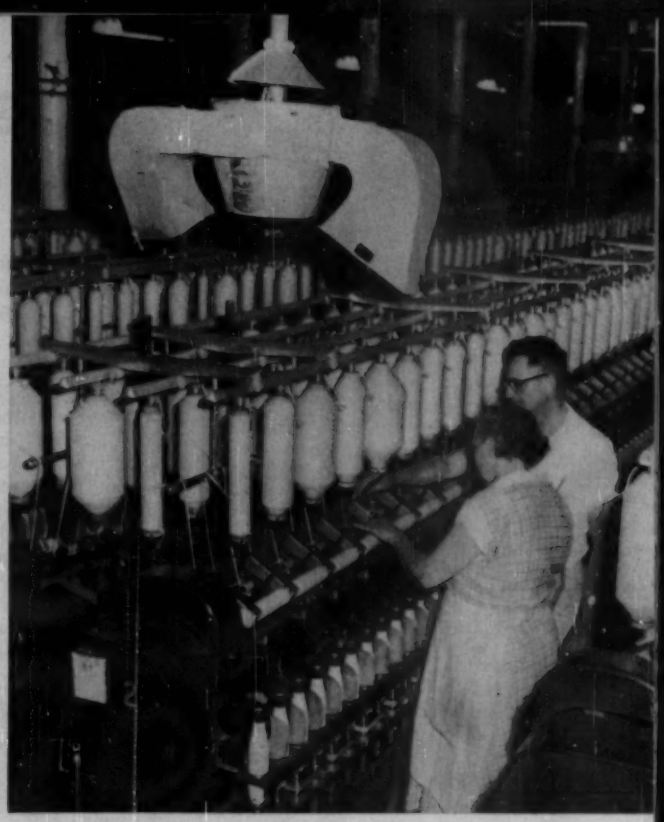
Typical test data on a DynAC controller on a spinning frame are shown in the accompanying table. This particular spinning frame was producing warp yarn. The average braking torque is relatively low.

CONTINUED ON PAGE 178

Spinning frame	Motor data	Acceleration time	Braking time	D.c.-braking current	Average braking torque
Saco-Lowell 216 bobbins	7½ hp. 7.4 amps.	4 secs.	8 secs.	19.8 amps.	70%

TEST DATA of a typical spinning-frame installation of DynAC show the results on warp yarn.

OPEN CREELS cut creeling time 20%, according to studies now being made.



MECHANICAL CLEANERS and open creels reduced over-all cleaning time 30%.

Beaumont Modernizes 177 More SPINNING Frames

- Beaumont Div., Spartanburg, S. C., is modernizing the last of its 273 spinning frames. The final batch was equipped with new drafting, spring weighting, lint-free creels, overhead cleaners, and a materials-recovery system.
- The improvements resulted in increased production and work assignments and decreased creeling and cleaning. Over 130,000 lbs. of dead weight was removed from the spinning-room floor. Here are the details—

By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

Beaumont Div., Spartan Mills, Spartanburg, S. C., is completing a modernization program covering 273 spinning frames. Last year, 96 frames were changed over to Clean-Align drafting and Pneumafil lint-free creels. This year, 177 more frames are being rebuilt.

Of the 177 Whitin frames now undergoing modernization, 103 were equipped with Whitin Unitrol center-suspension drafting and the Pneumafil materials-recovery system.

An important feature of the change-over was the elimination of more than 130,000 lbs. of dead weighting from the spinning-room floor. Each 256-spindle frame formerly carried 1,280 lbs. of weights. The spring-weighting unit of the Unitrol drafting system requires no weights at all. At Beaumont, the weighting arm is preset to exert 30 lbs. pressure on the front rolls and 15 lbs. on the middle and back rolls.

The frames are 3¼-, 3½- and 4-in. gauge. Old 54-mm. cradles were replaced with 36-mm. cradles on most frames, and top stationary clearers and underclearers were removed. The 3-in.-gauge frames were equipped with 30-mm. cradles.

Clearers Clean One Roll

Front revolving clearers were replaced with revolving clearers that clean only one two-boss roll. This change, made by the mill shop, improved drafting and reduced roll picking.

The antifriction top front rolls and nonlubricated middle and back rolls have a run-out of less than 0.001 in. These rolls, equipped with Dayco cots, require no lubrication. The bottom front steel rolls are greased once a week with Alemite fittings that the mill built into the roll stands. The other bottom steel rolls are oiled weekly with one drop of oil each. Head-end gears are lubricated daily with the Bijur one-shot system.

The frames, with 240 to 300 spindles each, have 8-, 9-, and 10-in. cylinders and are driven with 10- and 15-hp. motors. Combination builders are used on both warp and filling frames. The ball-bearing spindles are plumbed once a year. Travelers are changed every 100 hrs.

The modernized frames, with 2¼-in. rings, spin 0.400 lb. of 15s warp yarn on a 10⅜-in. paper tube, compared with 0.349 lb. on the old 9¼-in. wooden bobbins. The yarn range is 8s to 21s.

There are 58.7% fewer ends down since the change-over was completed; the average for 15s warp is 25.5 per thousand spindle hours. Creeling time was reduced 20% because the 12x6 packages hold 54 oz. of yarn, compared with the old 11x5½ packages that held 36 oz.

Total cleaning time was reduced 30%, and daily cleaning by the spinners was cut 80%. These savings were made possible by the materials-recovery system and frame cleaners and by the elimination of flat clearers, underclearers, and one revolving top clearer.

Underframe cleaners, installed on the frames changed over previously, were not included in this phase of the modernization program.

Waste Is Returned

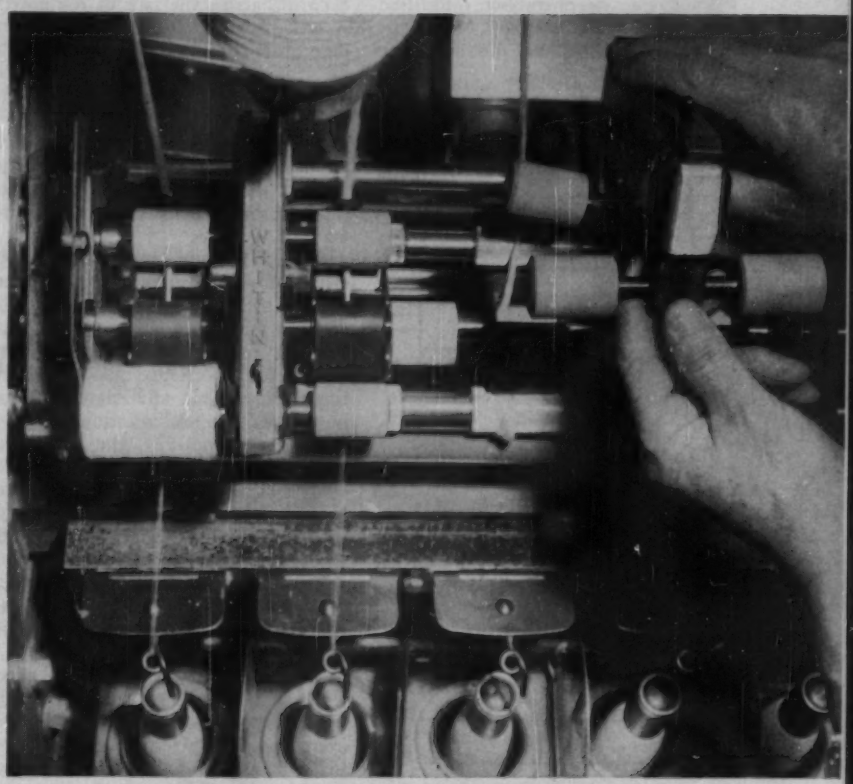
Before modernization, the frames were cleaned daily; now they are cleaned weekly, except for the rails that are brushed twice a shift. Pneumafil waste is returned to the pickers.

The operating setup is: hank roving 0.60, twist multiplier 4.75, mechanical draft 25, spindle speed 9,000 rpm., traveler speed 5,400 ft. per min., ring size 2¼ ins., and front-roll speed 170 rpm.

Altogether, the spinning improvements increased production 12%, reduced over-all cleaning time more than 30%, improved working conditions, and made possible a 35% increase in work assignments.

Beaumont is studying the possibilities of cycle spinning, which if adopted should result in further savings and increased production.

MATERIALS-RECOVERY DUCTS, which pass through the floor, return waste to the pickers.



SPARE APRON (white) for every four ends can be installed in 2 mins.

How To Crown RUBBER ROLLS

Proper crowning is an important factor in the efficiency and life of rubber rolls. This article tells—

- **Why most rolls are crowned**
- **What affects the crown**
- **How to figure the proper crown accurately**

By A. W. BEUCKER, Raybestos-Manhattan, Inc.

THE CROWN of rubber rolls used in textile processing is one of the important factors in producing an even nip across the face of the goods. A great deal of effort is expended to determine the correct density, rubber thickness, and applied pressure; but too often the importance of the crown is neglected.

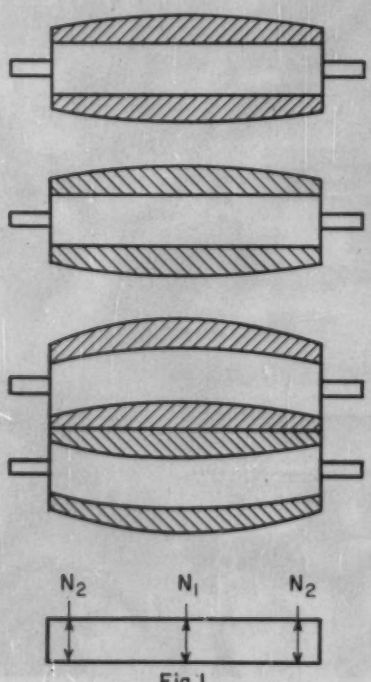


Fig. 1

ROLLS here are properly crowned. At the top, the rolls are shown under no load. At the center, the rolls are shown under load. The core has bent and the extra thickness of the rubber at the center has compensated for the deflection. At the bottom is the pattern made on a carbon paper by a properly crowned nip.

There is a proper crown for each application; and the extent of the crown is dependent on the other three factors of density, thickness, and load.

One of the reasons for rubber coverings on rolls is the ability of rubber, by means of its high elasticity, to make up for inequalities in processing and materials. But even rubber has its limitations, and good engineering dictates that any material must be used within its limitations.

Generally speaking, the softer the rubber the greater its ability to make up for irregularities. As an illustration, an improper crown on a roll may result in a variation in nip width across the face of the roll of from 0.6 to 0.3 in. If a softer roll were used under the same loading and the same wrong crown, the nip variation might be 1.6 to 1.3 ins.

It is easy to see what an effect the variation in the first nip would have; but the second, although still exercising an effect, might not actually damage the material being processed or the rubber roll covering.

What Makes a Good Nip?

Rubber-covered rolls are usually used to remove liquid from or force liquid into paper or textiles. Up to a certain point, an increase in pressure results in more liquid being wrung out of the fabric. It has been determined that, beyond a point, an increase in pressure no longer results in more water being expressed from the web.

To obtain a uniform liquid content across the web being processed, it is necessary to have a uniform nip width across the face of the roll.

Any roll can be considered as a simple beam. A beam will deflect under a load and will deflect different amounts for different loads. If we consider the case of a pair of rubber-covered rolls that have been ground straight-faced and that are loaded by a force being applied to their journals, we find the situation as shown in Fig. 2. The rolls are bending under the application of the load, which produces increased pressure near the ends of the roll.

What Crowning Does

The simplest method of rectifying this situation is to increase the thickness of the rubber in the center of the roll, tapering out toward the end. When this is done, you have an equal pressure across the nip as shown in Fig. 1.

If for some reason the loading on the journals of the roll is now decreased, you will find that the increased thickness of rubber is now causing the pressure to be high in the center, as shown in Fig. 3.

Thus it is possible to compensate for the deflection of the rolls under load by increasing the thickness of the cover in the center of the roll. It must be remembered that each loading has its corresponding crown, which is independent of the hardness

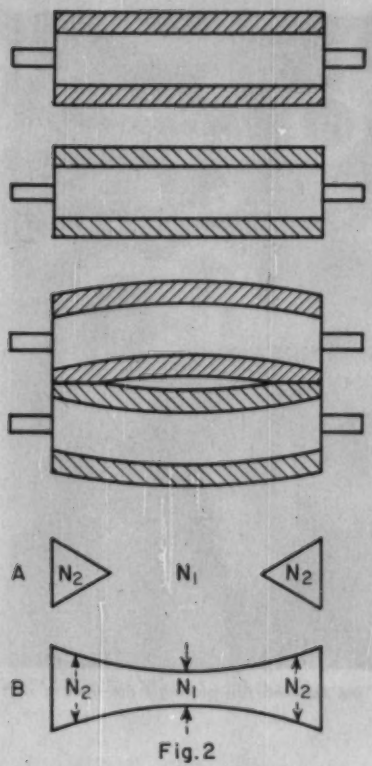


Fig. 2

ROLLS are not crowned in this drawing, and the nip in the center view is badly deformed from deflection of the core. Carbon-paper patterns at A are exaggerated; this type of nip usually shows a pattern represented by B.

of the rubber because the crowning compensates for the deflection of metal.

The proper crown can be determined by calculation from beam theory, by trial and error, or by calculation from nip widths. Calculation from beam theory is somewhat difficult because rolls usually contain heads, fixed journals, etc., all of which complicate the calculations even if complete drawings are available. The trial-and-error method will work, but it often results in much loss of time and material. Manhattan Rubber Division has developed a means of calculating crown from nip widths that has proved of great value and reliability.

How To Calculate the Crown

All that is necessary for the calculation are the measurements of the nip widths under the loading at which the roll is to be run. While the nip widths are being taken, the roll may be crowned or not as long as the crown is known.

To obtain nip widths, carbon paper nips are taken across the face of the roll. We have found that more-accurate measurements can be taken if the width of the nip is measured from its impression on the carbon paper itself rather than on the backing sheet.

Having determined the nip widths under the desired loadings and knowing the diameters of your rolls, you can determine the amount of crown by applying the following expression:

C = crown to be put into the roll, i.e. the difference in diameter between the center and 2 ins. in from the ends of the roll
N_1 = nip width at center of roll
N_2 = nip width 2 ins. from the ends of the roll
D_1 = diameter of top roll
D_2 = diameter of bottom roll

then

$$C = \frac{(N_2^2 - N_1^2)(D_1 + D_2)}{2 D_1 D_2}$$

or if rolls have equal diameters

$$C = \frac{N_2^2 - N_1^2}{D}$$

As an example, assume that you have two 12-in.-dia. rolls and find that the nip widths are 0.9 in. on the ends and 0.7 in. at the center under the loading at which you desire to run the rolls.

Then by the formula, since:

$N_1 = 0.7$
$N_2 = 0.9$
$D = 12$

Then:

$$C = \frac{(0.9^2 - 0.7^2)}{12} = \frac{0.81 - 0.49}{12}$$

$$= \frac{.32}{12} = 0.027 \text{ in.}$$

How To Apply the Formula

If the rolls were originally ground straight-face, you would now put a crown of 0.027 in. into the rubber. If the crown were originally 0.030 in., it would be increased to 0.057 in. If the situation were reversed and the nip at the center (N_1) were 0.9 in. and the nip at the ends (N_2) were 0.7 in., your indicated crown would then be —0.027 in., indicating that the nip already contained too much crown. Similarly if the crown on our roll were 0.030 in., then the proper crown would be 0.003 in.

The crown as determined above is, of course, the combined crown for the two rolls involved. The amount of this crown that should be put into the top and the bottom roll will depend on the individual machine and operation. It is frequently helpful to determine crowns for various loadings so that if you desire to change the loading, then the proper crown for the roll will be immediately available.

Using carbon paper to determine the actual nip widths of a pair of rolls under operating conditions is a method too infrequently employed. Normally, if the goods being processed appear to be uniform in moisture content as they leave the process, it is assumed that all is working well all along the line.

Uneven pressure across the width of the roll caused by insufficient crown will not be detectable by tests on the finished product provided the pressure is not high enough to actually start crushing the web being processed.

The effect of this uneven pressure from lack of crown or excessive loading for the crown used will then become evident only in uneven wear and end-cracking of the rubber-covered rolls, and finally, defective goods.

The time and labor that are spent in determining proper crowns for rubber-covered rolls will be more than compensated for in improved performance and decreased maintenance costs.

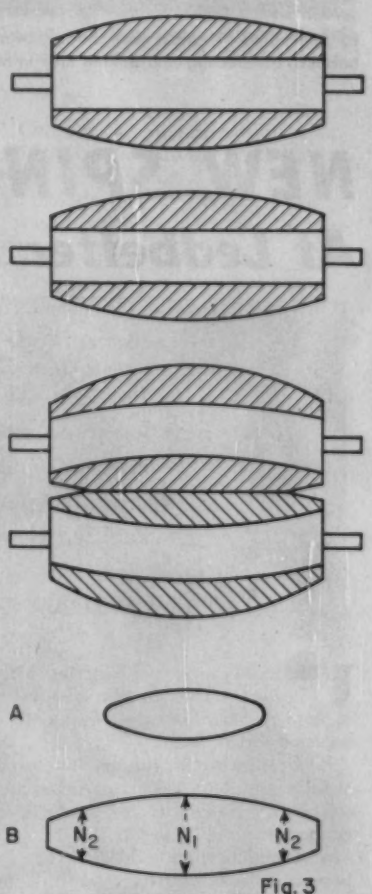
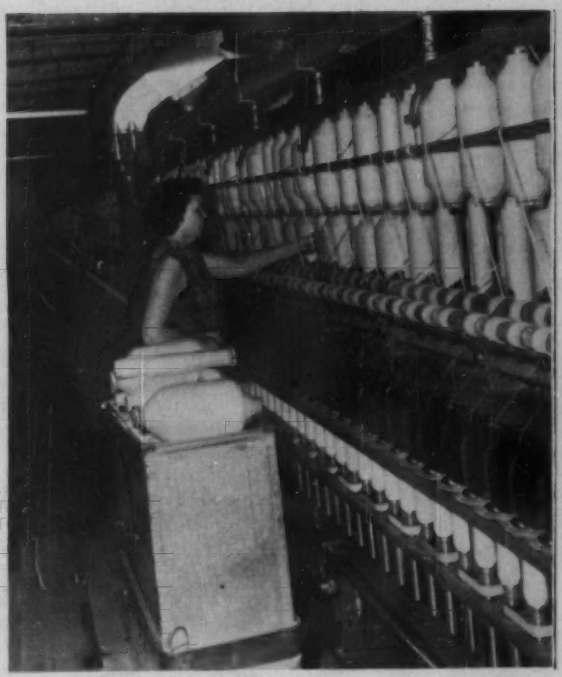
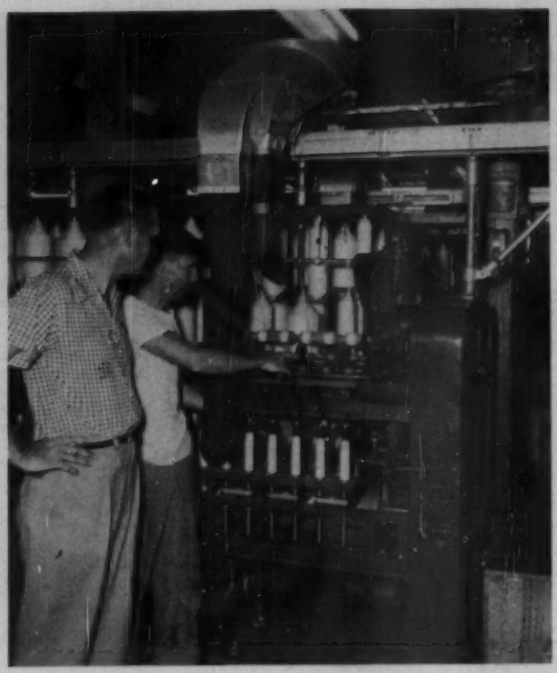


Fig. 3

ROLLS have too much crown. Only the center area—exaggerated at A—will make contact. In most cases the actual pattern would be similar to B.



F5 SPINNING FRAMES, with 54-oz. roving packages and 7-oz. bobbins, cut creeling and doffing time in half.



NEW DRAFTING SYSTEM reduced roll picking from once a shift to once a week.

NEW SPINNING Increases Production At Ledbetter Mfg. Co.

Ledbetter Mfg. Co., Rockingham, N. C., is completing a modernization program that increased over-all production 30% and improved the quality of its 12s to 24s carded yarn. The new spinning—

- Increased manhour production 60%
- Reduced ends down 30%
- Increased package size 60%
- Reduced cleaning time 50%

By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

UNTIL RECENTLY, Ledbetter Mfg. Co., located on a beautiful lake in the Sandhill country near Rockingham, N. C., had good fishing to offer its employees—but not much future.

The mill was old, the machinery was obsolete, and most of the equipment was driven by an archaic water wheel and rope drive. Electricity was produced by a diesel engine and generator.

The management, headed by J. M. Ledbetter, Jr., president, realized that the mill had to modernize or liquidate. The decision was made to modernize; and an all-out improvement program, still under way, was started.

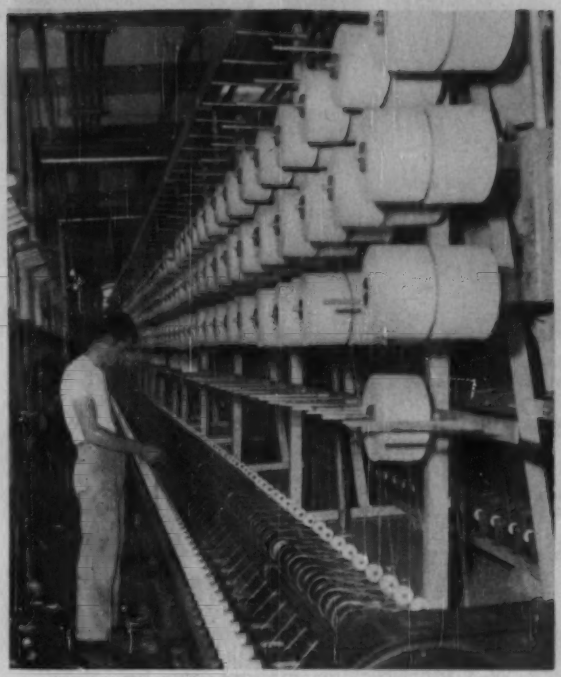
Practically every department in the mill was revamped. Production of 12s to 24s carded yarn increased 30%, quality improved, and costs were greatly reduced.

Rope Drive Is Abandoned

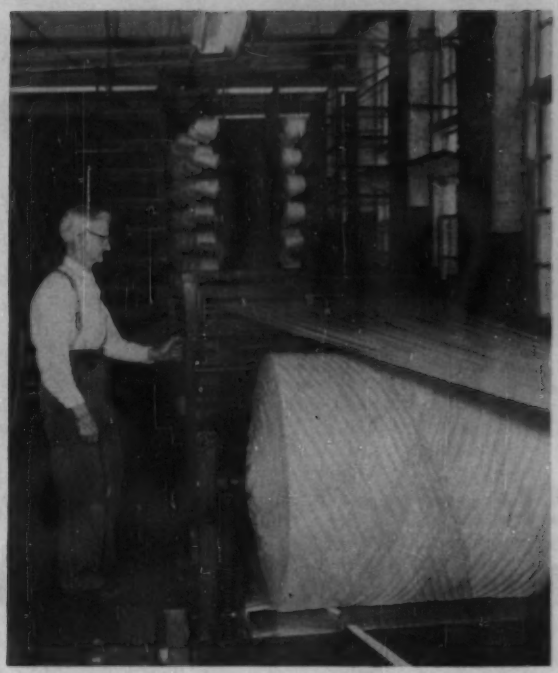
The first step was to abandon the rope drive and diesel engine in favor of purchased power, which is now used througout the mill. Next, new modernized equipment was installed in nearly every department. The biggest single expenditure was for spinning.

Formerly, there were 36 old Saco-Petee spinning frames in place that required nine spinners, four doffers, and two roving haulers to operate. These frames were replaced with 26 new Whitin F5 Super-Flex frames, which are run by three spinners, one cleaning girl, and two doffers. This change alone resulted in a 60% saving in direct labor cost.

In spinning 16s, an average number, ends down de-



TWISTERS WERE REBUILT so that package size could be increased 30%.



BALL WARPER increased production and improved quality. The operator, B. F. Marks, has been running warpers 45 years.

creased from 28 to 18 per thousand spindle hours. Package size was increased from 2¾ to 7 oz. Breaking strength and quality went up substantially. Frame efficiency is now 93%, compared with 85% for the old frames.

Cleaning Is Reduced 50%

Open creels, Pneumafil, and overhead Parks-Cramer traveling cleaners cut cleaning time over 50%. For example, rolls are now picked once a week, compared with once a shift formerly. Also, time required for lubricating frames was reduced greatly.

The 264-spindle frames are 3¾-in. gauge and have 2½-in. rings. The 9-in. traverse is adjustable to 11 ins.

In spinning 12s yarn, spindle speed is 9,300 rpm. and front-roll speed is 172 rpm. For the finer numbers, spindle speed remains the same but front-roll speed is reduced. For example, front-roll speed for 20s is 152 rpm. Draft ranges from 28 to 50.

Ledbetter reduced spooler operators from seven to two by substituting one new Barber-Colman spooler for eight obsolete Draper spoolers. The new spooler makes 2¾-lb. cheeses at 1,200 yds. per min. Returns are less than 10%.

Twisters Are Rebuilt

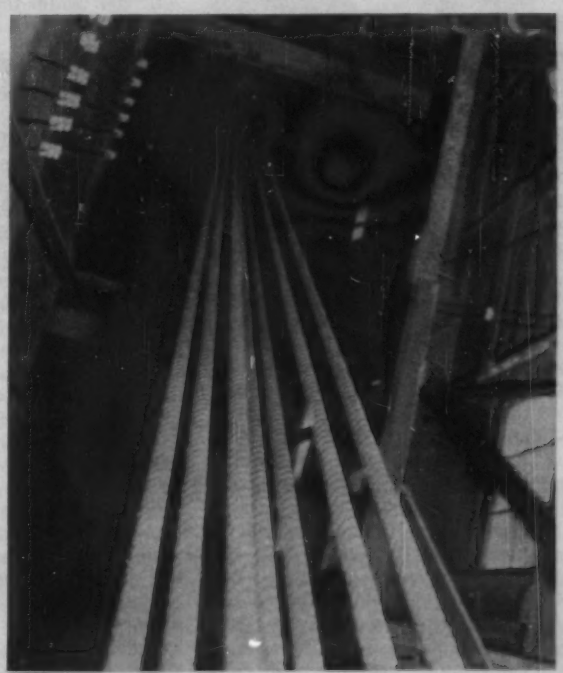
Twister operators were reduced from six to four by converting 27 old 160-spindle twisters into 16 272-spindle frames with 3-in. rings and 7½-in. traverse. Ball-bearing cylinders and chain drives were installed, and the package size was increased from 5 to 7 oz.

Winding operators were reduced from seven to three by replacing old No. 50 winders with three new Roto-Coners. Dyetex tubes, cones, and hard tubes are made in this department.

A modern Cocker ball warper that runs 250 to 500 yds. per min. was installed. Warps have 400 ends, are 12,000 yds. long, and weigh 650 lbs. The old warper, which was replaced, made four warps at 50 yds. per min. One man operates the new warper.

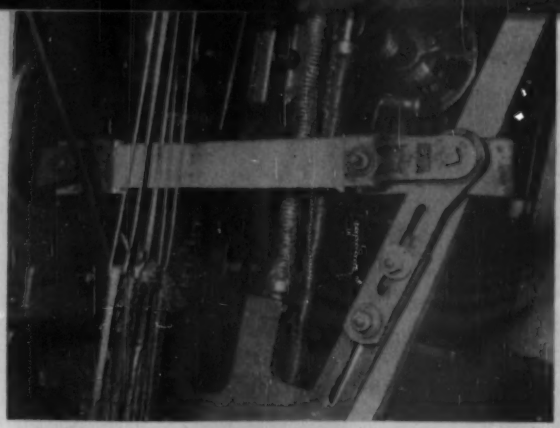
New Parks-Cramer Gradumatic humidification equipment keeps humidity at 50% in the carding and spinning rooms and 70% in the winding room.

Other improvements include new fluorescent lighting, a new elevator, new wiring, and an electronically controlled conditioning room.



ROPE DRIVE, a souvenir of the past, still exists but has been abandoned.

SKIPS in the cloth can be seen better by bringing the eyes down almost level with the cloth.



SWEEP STICK should be about 1 in. higher at the picker stick than it is at the picking sweep arm.

Standard Settings Should Be Used For PICKING-MOTION Maintenance

The repair and maintenance of Type W-3 loom-picking motions can be simplified by—

- Adopting standard settings
- Checking parts methodically
- Replacing worn parts

By **EUGENE P. SCHREMP**, Consulting Editor, TEXTILE WORLD

To meet the competitive requirements of weaving production, today's loomfixer must be a highly trained technician. A weaving mill cannot afford to have a loom out of production while a loomfixer experiments with it. Nor can it permit the production of off-quality cloth caused by rule-of-thumb loom settings.

The loomfixer who adopts and uses standard loom settings can keep his looms operating more economically. He can also produce more cloth of better quality. Standard loom settings may not cover all weaving conditions, but they will serve as a starting point. Variations from standard settings, if intelligently made, will meet unusual conditions without the use of trial-and-error methods.

The picking motion of a W-3 loom is a part that will quickly show the advantages of uniform setting and timing. Many cloth defects are caused by faulty picking motions. An improperly set or timed picking motion will cause undue wear and strain, not only to the part in question but to the entire loom.

Filling Will Slough Off

Too much power at the pick will cause filling kinks. These defects may be in the form of small tight kinks or long loop kinks. An excessive amount of power will cause the shuttle to strike the top of the box back. The shuttle will splinter and cause warp breaks and low weaving efficiency.

Hard-picking looms may cause the filling to slough off the quill in the shuttle. The sloughed filling will cause broken picks, or the loose filling may be carried into the cloth by the shuttle. In some types of fabrics these loose ends of filling cannot be removed without leaving a major defect in the cloth.

Shuttle skips are weaving imperfections that often result from a picking motion that is timed too early. If the shuttle is picked out of the box before the harness movement is complete, some of the warp ends may be forced up or down and cause shuttle skips. These defects may be very small, skipping over or under one or more warp ends, or they may extend for some distance across the cloth.

The shuttle skips show more plainly on the back of some weaves. For this reason, weavers should be instructed to watch the back of the cloth as well as the face. The back can be examined by looking at the roll of cloth on the loom.

The cost of supply parts is greatly increased when the picking motion is not set correctly. Under good loomfixing conditions, parts such as pickers, picker sticks, lug straps, and sweep straps will give maximum service. Improper loom adjustments and poor loomfixing practices may cut the life of some parts to a few hours.

Timing Is Important

Timing of the pick and sweep is very important. On the W-3 loom the pick should be timed to start at top center position. At this point the distance from the box mouth to inside edge of breastbeam is approximately 8¼ ins. The end of the picking stroke occurs when the distance from box to breastbeam is 10⅝ ins.

CONTINUED ON PAGE 174

Timely MAINTENANCE Checking Prevents Equipment Wear

• Textile Operating Executives of Georgia spent a good portion of the time at their last meeting swapping ideas on ways to prevent breakdowns of equipment under maintenance-department supervision.

THE FIRST QUESTION at the maintenance session of the meeting dealt with power transmitter-type loom drives. All mills with production installations of the drives find them satisfactory, but three mills with only limited experience with the drives aren't sure the drives are doing a good job. Typical favorable reports by mills are:

Mill A—"We have had 416 looms operating with the drives for two to three years. The drives are effective and efficient.

"We had a maintenance problem with the first hundred drives installed. But the problem was a lubrication problem and has been solved.

"Some of the advantages of the transmitter-type drive are: (1) a more-positive stop, (2) less clutch maintenance, (3) less variation of loom speed, (4) it's neater and cleaner, and (5) it's easier to maintain."

Mills Like Clutch-Brake Features

Mill B—"We have transmitter drives on 100 X-2 looms; 50 of these looms have been in service over a year, and 50 have been used about eight months.

"The drive is very satisfactory. The enclosed clutch-and-brake features, plus the fly-wheel effect, result in smooth operation. Loom maintenance is also reduced."

Mill C—"We have power transmitters on 220 looms that have been in operation 18 months. They are very satisfactory.

"Some of the advantages are: (1) less maintenance, (2) more-positive starting and stopping, and (3) ease of adjustment."

Mill D—"Weavers can operate this drive more easily than older drives. It is easy to repair, gives more-uniform loom speed, and requires little maintenance; and the loom operates more smoothly."

Loom Motors Need Few Repairs

Mills aren't giving much maintenance attention to the newer totally enclosed loom motors. Of 11 mills reporting on loom-motor maintenance, only four mills have definite maintenance schedules. The reports indicate that the motors just don't need close attention other than lubrication. Reports of mills with maintenance schedules are:

Mill A—"Motors are overhauled as they need it. They are oiled every three months."

Mill B—"We check our loom motors every five to six years. To check a motor, the motor is torn down and the windings are cleaned thoroughly. If the leads are bad, they are replaced. Then the motor is baked in an oven until it's thoroughly dry.

"The stator windings are dipped in a black elastic baking varnish while they're still hot. Then the stator is placed back in the oven and baked until the varnish is thoroughly dry.

Compound Stops Varnish Sticking

"Bearings and shafts are checked and replaced when necessary.

"One of the problems we formerly had in motor overhauling was the removal of excess baking varnish from the motor housing after the dipping. We solved this problem by painting the housing with a masking compound before dipping. Now the varnish is removed from the housing quickly and easily after the motor is baked."

Mill C—"All our loom motors are totally enclosed except 175 1½-hp. open motors. The totally enclosed motors are not cleaned or inspected by a regular schedule.

"The 175 open motors are cleaned and inspected once each year."

Mill D—"We clean, dip, and bake our motors every three years. At this overhaul, we also check the bearings."

Humidifiers Receive Constant Care

Humidification maintenance in 12 mills is done under machine-shop supervisors. In two mills, each mill production department maintains its own equipment. Three mills have set up special departments to maintain humidification equipment. Mills reporting on each system are:

Mill A—"A crew from the shop maintains our humidifier system. On the first shift, there's a humidifier man, an assistant, and a cleaner. On the second shift, we have a humidifier assistant and cleaners. On the third shift, we have only cleaners.

"The humidifier man reports to the master mechanic and is responsible for the condition of the system. He also checks, cleans, and adjusts regulators, electrical equipment for the system, etc.

Men Have Specific Duties

"The assistant cleans and adjusts regulators, cleans atomizer heads, attends air compressors, filter tanks, etc.

"The cleaning crew cleans all window units, changes filter bags and cleans the bags, wipes off and cleans all humidifier ducts, cleans all atomizer lines, etc.

"Production departments do not do any maintenance work on the humidifier system."

Mill B—"All maintenance work on humidifiers is done by a machine-shop employee. Each humidifier is taken down, completely overhauled, cleaned, and painted once each year. Worn parts are replaced at the overhaul.

"This employee also does all maintenance work needed between annual overhauls.

Production Employees Help

"Department supervisors regulate the flow of water to and from the humidifiers while they are in operation."

Mill C—"All our humidification equipment is kept up by employees in the plant. They call on the shop only for alterations where pipe work is needed."

Mill D—"The foreman of our pipe and welding shop has charge of our air-conditioning equipment. He has a humidifier man on each shift.

"Production employees are not allowed to tamper with humidity controls; they report any irregularities to the humidifier man on duty."

Mill E—"We have one man for central maintenance of humidifiers. He works for our technical department."

CONTINUED ON PAGE 178

KNITTING MACHINES are arranged with small-diameter machines in one row and large machines in the next row to equalize work assignments.

Modern KNITTING METHODS Keep Waste Down at General

Modern equipment and methods in General Knitting Mills' new plant at Monroe, N. C., have helped to keep production high and waste low. They include—

- Efficient machinery layout
- Humidification system
- Waste-control system
- Individual drives

By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

In 1946, General Knitting Mills, Inc., started contract knitting in Pennsylvania on two new Supreme ML machines. President Louis Boxer and his two sons now have 225 rib and jersey machines in a new mill that was completed last spring.

The new mill, built at Monroe, N. C., is a single-floor building that covers 30,000 sq. ft. Outerwear fabrics are knitted in a section separate from underwear fabrics and fabrics made from undyed yarns.

In the underwear section, the rib machines are arranged at one end of the room and the jersey machines at the other end of the room. Two rows of machines run down either side of the room. The machines are arranged so that the smallest-diameter machines are at one end of the section.

How Machines Are Laid Out

The largest-diameter machines are opposite the smallest-diameter machines, and the diameters are gradually reduced toward the outer end of the line. This system balances knitters' work assignments so that one knitter may attend machines with an equal number of feeds.

The main air line runs around the walls of the mill and down the center of the room. There are outlets for flexible air pipes at 20-ft. intervals. Strip lighting with 8-ft. fluorescent tubes is arranged down the center of each line of knitting machines.

The floors are concrete, and the power lines for the knitting machines are built into the floor. The conduits run to wall switch boxes arranged in groups of three on the outside walls.

All machines have individual drives. Nye & Trednick rib machines have been converted to individual drives. A ½-hp. motor has been mounted on a bracket plate on each bottom ring. The drive shaft was lengthened and a clutch installed on the shaft.

The clutch is driven through a V-belt from a small pulley on the motor. A cover over the clutch and belt completes the conversion. The first drive was designed and made in the mill, and a local machine shop is now making parts for the remainder of the conversions.

An oil-fired furnace is installed in the boiler room, which also contains three compressors. Two 10-hp. compressors supply air to keep the knitting machines blown down, and a 50-hp. compressor supplies air for the American Moistening Co. humidification system.

Mill Is Humidified

Humidity in the mill is controlled at 55 to 60% r.h. with Foxboro instruments. The pressure in the humidification system is reduced to 35 lbs. per sq in. The compressors are connected so that in case of failure of one compressor another compressor can be brought into action.

So much importance is attached to a constant air supply that each 10-hp. compressor is run on alternate days. While one compressor is shut down, it is oiled and serviced.

The air hose is used sparingly on jersey machines while cotton yarns are knitted. Lint is constantly removed from rib machines. Knitters are taught to blow lint away from the needles and fabric.

On both types of machines, the air hose is used generously at the end of each roll. The top of the machine is thoroughly cleaned, the needles are oiled, and the excess oil is blown off.

The oily waste resulting from this oiling is cut off. This waste and any other waste made during the shift is saved by the knitter in a special bag made for the purpose and marked with the knitter's name.

The waste is recorded each day and posted on a bulletin-board against the knitter's or fixer's name. At the end of the week, the waste is totaled. This system has resulted in a 30% reduction in waste.

When fabric rolls are removed from the machine, they are inspected by the knitter all the way around inside and outside for faults. A piece number is marked at the beginning of each roll with a dye-resist solution to make easy identification.

Chain Controls Fabric Lengths

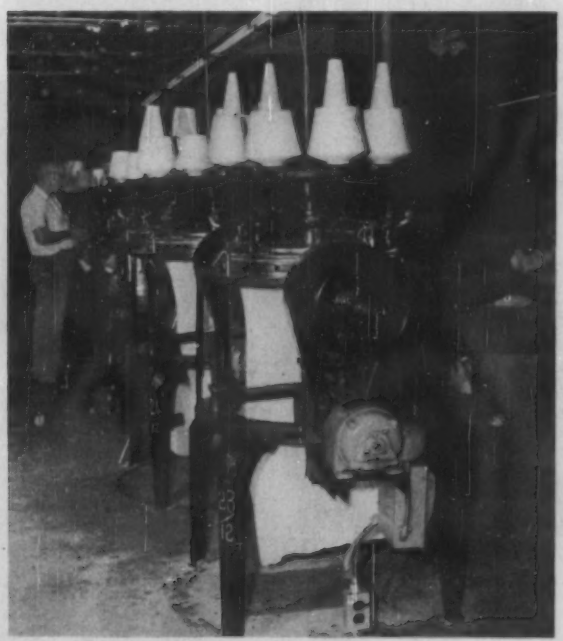
Some Supreme rib machines are used to make fabric lengths of rib and tuck stitch that are used for women's snuggies. A chain fixed to the top ring controls the dial clearing cams to change the fabric.

Because of this change in fabric structure, the take-up rolls do not operate efficiently. They pull the cloth out of shape so the take-up rolls are removed and replaced with a cardboard box. The fabric falls loosely into the box as it is knitted.

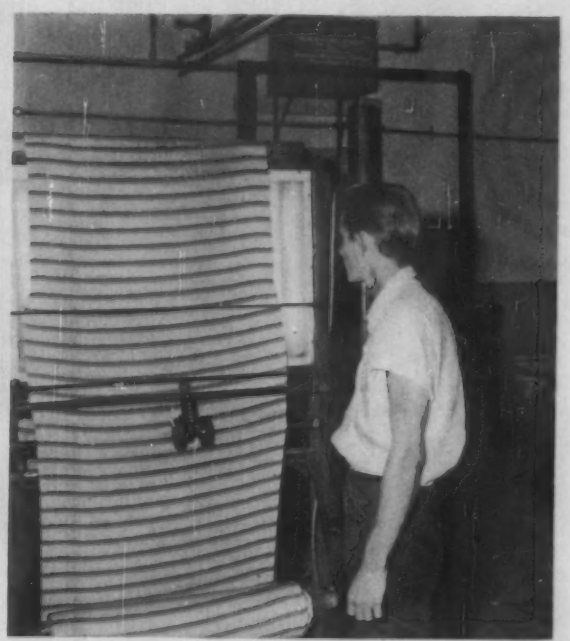
When this fabric is taken from the machine, it is folded and laid in another box. The knitter inspects each garment length as it is removed from the machine. The mechanic

CONTINUED ON PAGE 182

FABRIC LENGTHS of tuck and rib cloth are made on Supreme machines fitted with a chain to change the stitch. A cardboard box replaces the take-up rollers.



INDIVIDUAL DRIVES on all machines have eliminated shafting. These drives on Nye & Trednick machines have ½-hp. motors and were designed at the mill.



FABRIC INSPECTION of the first roll from each order is done over a lighted frame. The yield is also checked. Humidity is maintained at 55 to 60% r.h.

COMPOUNDED LATEX is reworked in this mill before use as carpet backing. The formula includes sodium bicarbonate, which provides CO_2 to create the sponge.

How Sidney Blumenthal Applies RUBBER CARPET BACKING

At the Caromount plant of Sidney Blumenthal & Co., one line of carpeting is backed with a very heavy layer of sponge rubber. Uniform results are obtained by—

- **Continuous operation**
- **Close control of heat, speed, and thickness**

By **ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

SIDNEY BLUMENTHAL & Co. puts years of extra service into carpets by vulcanizing a layer of sponge rubber to the back of the carpeting in a continuous operation.

The carpeting backed in this way is intended for institutional service, public buildings, or other spots where unusual wear is to be expected. The process is adaptable to the less expensive lines as well as the highest quality produced by Blumenthal.

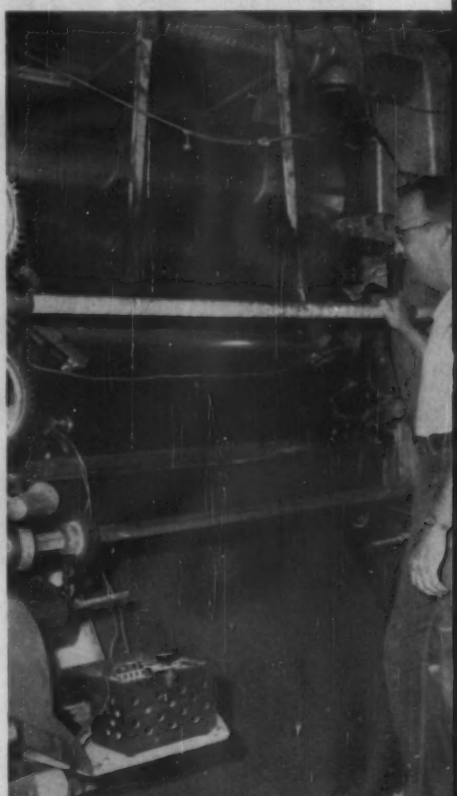
To prepare the back of the carpeting to receive the finish coat of sponge rubber, a thin layer of latex is applied in a conventional roller coater hooked up with a drying and curing tenter. The slightly tacky surface produced in this operation insures good bonding of the heavier layer of sponge rubber that is applied next.

Blumenthal buys specially blended synthetic rubber that is delivered to the plant in bales of sheets. Sheets average about 1 in. in thickness and are reworked at the plant just before use.

To produce the sponge-like structure of the backing, sodium bicarbonate is worked into the latex compound. During the curing operation the bicarbonate breaks down and releases bubbles of CO_2, which produces the characteristic resilient backing that is required.

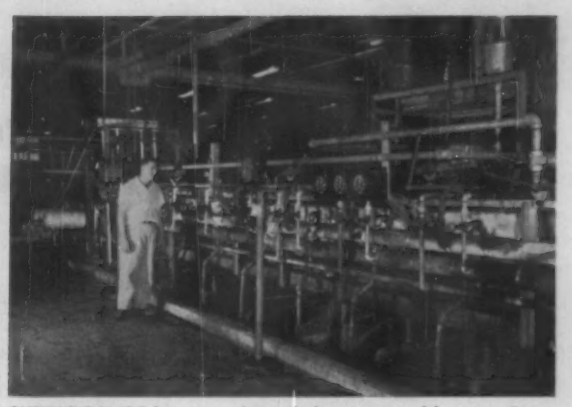
How Backing Is Applied

The prepared carpeting is first led through a preheating chamber mounted overhead and then travels directly into the nip of a heavy four-roll calender that is charged with the rubber backing material. The setting between the upper rolls in the calender is very carefully controlled to deliver just the right thickness of rubber, and the lower nip is adjusted to carry this layer plus the carpeting with no more than a firm pressing to insure adhesion.



LAYER OF RUBBER is applied to the carpet in this heavy calender. The thickness of the rubber is very carefully controlled to produce carpets of uniform thickness.

CURING takes place between endless cotton belts that convey the carpet and its rubber backing through the curing range.



CURING RANGE has steam-heated chests top and bottom. Space between them can be varied for different thicknesses of sponge.

As the carpeting leaves the calender, it is guided into the curing unit and enters between two cotton canvas belts that convey the carpeting into the space between the steam chests.

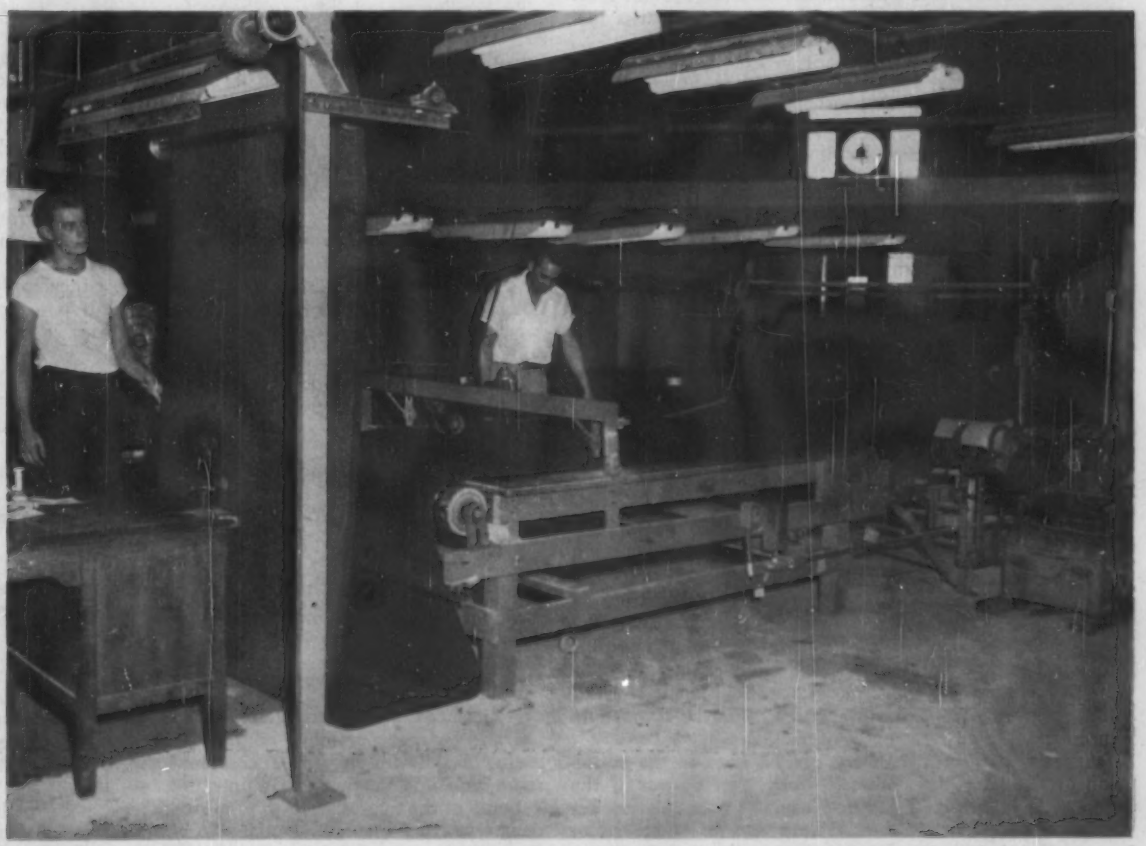
Here again control of thickness is very carefully watched, and the settings between the steam chests are adjusted with micrometers to insure uniformity of thickness.

The curing proceeds continuously, but temperature control is in three steps. The entering end of the curer is kept at 320° F., the second section at 330° F., and the final section at 340° F.

When the carpeting comes from the curer, it is led into a cooling chamber to remove excess heat and then is drawn over an examining perch. Here thickness gauges are used to check the thickness, and a power knife is used to trim off the excess rubber at the edges of the carpeting.

Inspection of the face follows as the carpeting is reversed and travels up over a roll that leads to the batcher.

Continuous operation under controlled conditions produces a uniform product with a fairly dense but resilient backing.



FINAL INSPECTION includes checking for uniform thickness, over-all appearance, trimming off the raw edge of the carpet, and batching into shipping-size rolls.

Individual Loom Records Help Control SUPPLY COSTS

Charging the cost of major supply items to individual looms helps locate trouble spots. Such records will also—

- **Help improve quality and output**
- **Show up inefficient loomfixing**
- **Serve as an aid in personnel management**

By **WILMER C. WESTBROOK,** Assistant Editor, TEXTILE WORLD

REPAIR PARTS and supplies are a major item in the cost of weaving. This cost varies from loom to loom. There will also be a difference in the maintenance cost of different sections. It will cost two or even three times as much to keep certain looms or sections in good repair as it does other identical looms and jobs.

Too often, the sections that cost the most to maintain are the least efficient. There are several reasons for this. First, the use of a number of parts naturally requires machine downtime for installation and adjustment.

Second, when a loomfixer uses an excessive number of repair parts, most of his time is taken up making repairs. He has little time for preventive maintenance, and the neglect of the looms creates a demand for more repairs. Like a snowball rolling downhill, the job will require more and more repairs and take an increasing amount of the loomfixer's time.

Third, a loom or section that uses a great many repair parts usually indicates sloppy loomfixing or, at best, a careless setting of parts. This situation is hard to correct with three-shift operation. To get three men to cooperate on a job is sometimes impossible. It is also hard to find just who is responsible; there's always a lot of buckpassing when an investigation is made.

So the Loomfixer Slows Down

But if looms are not fixed and they continue to give trouble, the morale of everyone on the section suffers. The loomfixer feels that one or both of the fixers on other shifts are not carrying their share of the load. So he slows down, too. Unable to get standard production from the looms, the weavers become cross and careless. As a result, they produce off-quality cloth and damage the looms with hurried start-ups in an effort to regain lost production.

The practical approach to the problem is to keep a record of every loom in the mill. It may not be possible to charge every item of supply to individual looms, but a few major items will serve as a yardstick. Shuttles, checkstraps, pickers, and picker sticks can easily be charged to the loom for which they are intended.

The service life of a shuttle gives a clue to the condition of the loom. Of course a shuttle can fly out of the shed and be ruined in the first hour after installation because of foreign matter in the warp, a careless weaver, or some other cause not related to the mechanical condition of the loom.

But if the same loom continues to have a record of short shuttle life, it needs attention. Each new shuttle should be put in carefully and the loom checked thoroughly. The loom needing a new shuttle prematurely should be checked by two or more qualified persons.

Use Book or Card Filing

In keeping records of repair parts for individual looms, a book or card filing system can be used. Space should be provided for a period of at least one year. A comparison by looms and by sections can be made. Also, a standard service life can be worked out for each item and used as a yardstick.

As each repair part is requisitioned, the supply clerk can record it and turn the records over to weave-room office personnel daily for filing. The records should be readily available for use by the overseer, second hands, and loomfixers. Such records have little value within themselves; it is the follow-up action that counts.

A weekly or monthly breakdown and recap of the supply figures should be made for each section and, if possible, each shift. This report will be of immense value if used correctly. It will:

1. Put the finger on inefficient sections
2. Give a clue to the ability of each loomfixer
3. Create a spirit of competition between fixers, sections, and shifts
4. Show if, when, and where supply costs are out of line
5. Serve as an aid to keep supply inventories at the most economical level
6. Help estimate costs of style changes
7. Show effects on the looms of any changes such as loom speeds, humidity, job assignments, different make or specifications of parts, etc.

Graphic Record Shows Trends

A breakdown of the figures into loom hours of service life and in cost per loom hour is very revealing. Other useful breakdowns show total cost per loom, section, shift, room, and mill per week or month.

Some of the figures, such as total supply cost and shuttle or checkstrap costs, are adaptable to graphic presentation. A graph is very useful as a medium for recording such data. It will show present performance compared to past

SHUTTLE REPORT

Date ..... 12/10/56.....

Shift..... 1 .....

Loom No. ..... 1403 .....

Sec. No. ..... 9 .....

Fixer..... Jones .....

2nd. Hand..... A. R. P. .....

TAG, filled in by loomfixer, has shuttle data.

SHUTTLE RECORD

Loom No. 1403 Room 2

Date	Shift	Loomfixer	Hours
1-3-56	1	Jones	—
3-21-56	3	Moore	1368
6-17-56	3	"	1920
6-26-56	2	Smith	192
10-3-56	1	Jones	1200
12-10-56	1	"	1224

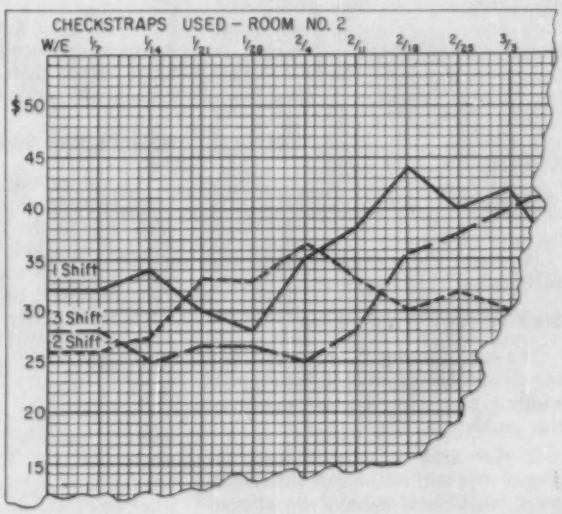
CARD gives permanent record of shuttle life.

WEAVING SUPPLY COST REPORT

Room No. 2 W/E 12-15-56

SEC.	SHIFT	AMOUNT	LOOMS	HOURS	COST L/H	STD COST
8	1	25.76	88	40	.0073	.008
"	2	31.03	88	40	.0088	.008
"	3	33.92	88	40	.0096	.008
9	1	32.19	66	40	.0122	.010
"	2	46.00	66	40	.0174	.010
"	3	35.45	66	32	.0167	.010
[illegible]	1	20.71	66	40	.0078	.010
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.010
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
"	2	26.33	88	40	.0074	.008
"	3	36.25	88	32	.0128	.008
TOTAL	1	244.42	630	40	.0097	.009
"	2	308.92	630	40	.0122	.009
"	3	212.34	630	36	.0093	.009
TOTAL ROOM		765.68	630	116	.0107	.009

COST of supplies is broken down on this report.



GRAPH can be used for reference or for posting.

performance and will quickly show trends and inequalities.

The supply-cost figures can be used as a valuable personnel-relations tool. Armed with the records, the supervisor can commend or reprimand employees as needed. He has something solid on which to base his talk.

The accumulated cost figures can be used in inaugurating an economy drive or in showing that supply costs have already been cut to a minimum. The supervisor who has such figures will not be caught out on a limb.

Cost Figures Have Dual Role

If not used judiciously, however, the supply-cost figures can do harm. If too much emphasis is placed on savings, the loom-maintenance program will suffer. It should be pointed out that the only place a saving is desired is where there is needless waste.

Very often an expenditure today will mean a saving tomorrow. If a loom is forced to operate with a badly worn or defective part, other parts may be damaged. Then when repairs are made, the total cost will be several times as much as it would have been if the part had been replaced earlier.

If a cracked shuttle is left in the loom, a few days may be added to its service life but it may cause all the cloth woven to be second-quality. And when the shuttle fails, it may cause a break-out or do other damage that will cost more to repair than several new shuttles.

So it can be seen that the supply-cost figures have a dual duty to perform. They must show the costs in such a way that those concerned can dig out the necessary and the unnecessary cost. By practical use of the figures, the supervisor will have an aid not only in cost control but also in machine maintenance, quality control, and personnel relations.

WOOL CARDING And SPINNING
Questions Are Answered—

—at the National Association of Woolen and Worsted Overseers 73rd annual convention. Members of the Carders' Guild, Worsted Spinners' Guild, Woolen Spinners' Guild, and Dressers' and Weavers' Guild helped to answer questions on—

- Running sweater clips
- Fine side ends
- Apron life
- Slub yarns

NEW ENGLAND woolen and worsted overseers had the opportunity of presenting some of their problems at their annual meeting at the Manger Hotel, Boston, Mass. Speakers at the convention were Henry B. Stuart, Jr., Whitin Machine Works, Louis Bussiere, Davis & Furber Machine Co., and Edward J. McBride, Edward J. McBride Co. Russell F. Brown, Lowell Technological Institute, was moderator on the discussion of carding problems.

Here are the questions asked and answered at this discussion:

Stop Fancies Winding Up

We are running 60-40 wool-rayon blends and having trouble with fancies winding up. How can we overcome this problem?

If the fancy is smooth, with the proper wire and running at the correct speed, this blend should run satisfactorily. On five-run yarn made from a 50-50 wool-rayon blend, the fancy should run OK at 465 to 485 rpm. The fancy should be 3-3-3 open-set 1¼-in wire if it is to run against a cylinder with 35-gauge card wire. A 28-wire open-set fancy is also good.

If the fancy winds only in spots, put it in a grinding frame and run it for a while to smooth any rough wires that might catch and hold stock.

If the fancy is wound too tightly and the wires are standing up straight, it will wind and cause trouble. Some fancies are spoiled before they have a chance to run on the card.

Set the fancy so that it makes a mark 1¼ ins. wide on the cylinder when it is turned backwards by hand. Chalk the full width of the cylinder. This setting is correct for a card main cylinder running 72 rpm. and the fancy turning about 465 rpm.

From 15 to 25 rpm. less fancy speed will often stop the throwing of stock. Cadmium-plated wire on a fancy gives a smooth wire that works very well.

If you have a close-set fancy and it throws, replace it with an open-set fancy rather than try to correct the throwing by increasing the fancy speed.

How To Run Sweater Clips

We are running a blend containing 15% sweater clips. Our trouble is hard ends in the clips. Will thread-remover wire help? If so, what size wire should we use and what rolls on the card should be covered?

Thread-remover wire will help get good carding. Use 32-gauge wire. Short-tooth wire is recommended for the first breaker card, and it should be put on every other worker. Use 36-gauge thread-remover wire on every worker on the second cylinder and regular fillet wire on the third or finisher cylinder. If 36-gauge wire does not work on the second breaker, try 34-gauge.

Sweater clips with seams sewed with cotton threads that have not been carbonized are difficult to remove. Before mills had Peralta rolls, they slowed down the strippers on the first and second breaker cards, and the cotton threads wound around the stripper rolls.

One mill puts coarser clothing on the first breaker card, such as 24 or 28 gauge. Workers are also clothed with coarser wire. Then later, the thread-removing wire is used on the first two workers. The coarser wire will pick up more threads.

The doffer on the first breaker should be run fast to make a very thin web so that the threads can be crushed by the Peralta rolls. Use heavy pressure on these rolls. Thread-removing wire is recommended on the third cylinder.

Be sure to have heavy wire on the first breaker, and slow the strippers to pick up the threads. Set the first-breaker workers to 30 gauge to open the threads.

Thread-removing wire has a needle point and is similar to napper wire. If it is set too close, the wire will ruin the cylinder wire; so it should be set open. Nep wire is a close-set rugged wire with a strong pitch. Set this wire close to the cylinder to catch small neps before they get to the doffer.

Some mills use thread-remover wire on the first breaker and nep-remover wire on the second breaker with good results.

Eliminate Fine Side Ends

How can we eliminate fine side ends? Our blend is 30-70 mohair-medium wool with noils and waste. Our cards are 60x60 with 120 ends. The cylinder speed is 75 rpm. and the fancy speed is 510 rpm. The fancy has 28-gauge 1½-in., straight-tooth, open-set wire.

Slackness of the tapes on the side would cause this trouble. Put in a waste tape 12 ins. longer than regular, and regulate the tension on it until the weight is OK on the sides.

Put more wire on the fancy, and slow it down so that less stock will be thrown to the center. If the lickerin or feed rolls are damaged and in bad condition at the end of the rolls, they will not pick up the stock and probably cause light ends.

Fine ends on one side can be caused by the cylinder and tape condenser not being lined up. Continuous tapes are said to give 42% more evenness than separate tapes.

The problem of light side ends may require a systematic check from the feed rolls right through the entire card. The leader fancy causes trouble if it is run too fast. One mill

eliminated the trouble by cutting the mohair shorter.

How To Make Slub Yarn

Are there advantages in using a nub box on the card in a mill where the nubs are now being mixed into the blend in the picker room? Can flake or slub yarn be made on a tape-condenser card?

Putting nubs in the stock at the picker room is the better way to get good distribution. Set the card off, and set the Peralta rolls up. With proper care, a nub box will do a good job. Some mills put nubs in on the broad band feed at a level where the operator can easily see what is happening.

Thick and thin effects in the yarn are made by putting a wire such as a heddle wire under the ring doffer on the finisher doffer wire and setting the high spot to the cylinder. Flake yarn is made where roving from a roll is pulled in and put on the cylinder by a worker to get the effect. Try moving the fancy away from the doffer.

There are many patents for slub and nub yarns, and they should be looked into before you go ahead and make one.

If slubs are put in at the picker, only two workers are set down on the card. A more-open wire is better so the nubs won't be opened.

Good results are obtained by putting in nubs so that they come in contact only with the last two workers on the finisher cylinder. If the cylinder is turning 1,200 ft. per min., many nubs are thrown out. Better staple length in the blend will hold the nubs together.

Nubs dropped by a homemade box just after the Peralta rolls work satisfactorily. If nubs are put in at the picker room, 12% nubs are put in to get 5% in the finished yarn because the loss of nubs in carding is 7%.

Nubs put in after the Peralta rolls work well if a doffer roll is not used. A regulation box with a dorduroy roll would probably work, and there would not be so much loss of nubs.

Oil Content Affects Aprons

Does the oil content on stock affect the life of aprons on Quick-Set rovers?

Yes, the maximum oil content on the stock is recommended at 1½%. Some mills change their aprons every six months, but there is a conditioner that can be used on aprons and rolls.

If laps develop on the aprons, how do you replace the bad aprons?

Put on extra aprons between the

CONTINUED ON PAGE 131

Tips on Setting TRICOT *Machines*

For best results in setting tricot machines—

- Move the guides deeper for long overlaps
- Check the space between guide bars
- Change the guide position when the needles are raised

By JOHN A. WERTMAN

MOST MODERN TRICOT MACHINES are 28 gauge. These machines have 28 needles, 28 sinkers, and 28 guides working in the space of 1 in. As a 28-gauge needle is about 0.017 in. wide, there is a space less than 0.02 in. for the sinkers and guides to work in.

The sinker width is about 0.008 in.; so there is a space less than 0.006 in. between the needle and sinker if the needle is centered between the sinkers. Guides are usually a little wider than the sinkers, but the needles at the tips where the guides work are narrower. The gap at this position is about 0.0075 in.

These gaps determine the thickness of yarn that can be run successfully. Yarns that are too thick cause end breakage, needle and guide breakage, and fast machine depreciation.

Use a Thickness Gauge

A thickness gauge should be in every mechanic's tool box. Settings should be made before the warp is entered in the machine.

Standard American setscrews usually have 20 threads per inch. Where these screws are fitted, one quarter turn of a square-headed screw will move the bar 0.0125 in.

Where European machines are installed, count the number of threads per inch. The distance the screw moves forward can then be calculated by dividing the number of threads into 1 in.

German machines have 26 sinkers and guides to each plate, but such machines are equivalent to 28 gauge because there are 180 plates instead of the usual 168 on American machines.

Set the presser bar 0.014 in. above the sinkers. Make sure that the presser-point angle is identical to the angle of the needle beard.

How To Set Guide Bars

Set the guide bars into the needles the depth of the hole in the guide. Where the guide is lapped over two or more needles, set the guides a little deeper.

If you raise or lower the needle bar for any reason, the guide bar should also be moved to conform to the original setting.

An incorrect swing through the needles by the guide bars can cause a lot of trouble. When the needle bar is raised, the swing must sometimes be lengthened.

When the guide bar swings through the needles, it must clear the threads and the needles. The move to put the threads under the beards must be completed before the guide bar starts to return through the needles.

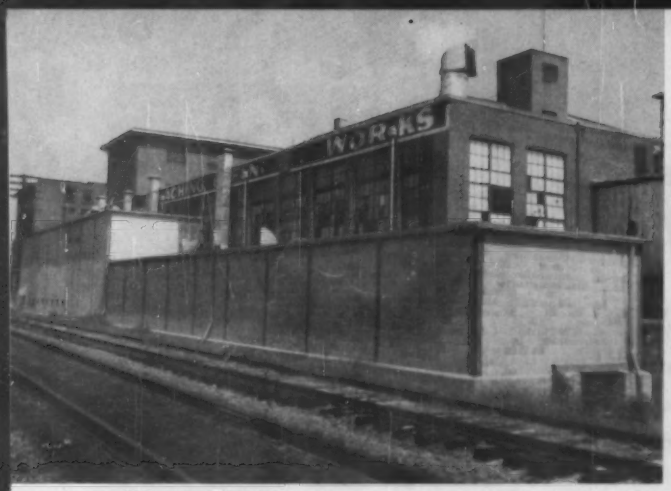
The move may start as soon as the guides have cleared the needles to get to the position of the shift to the right or the left.

Check Space Behind Guides

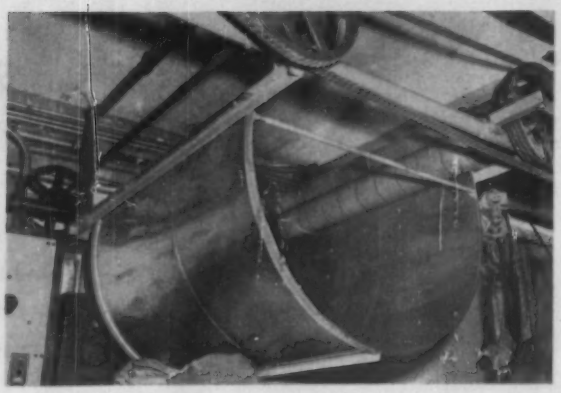
The space between the needles and the guides is usually checked after an adjustment, but the space when the guides are in front of the needle is frequently overlooked. Insufficient space here may cause pinholes and catch marks, and in extreme cases the guides may tip the needle enough to cause needle loading.

The length of the sweep may need to be increased and the position of the guides changed to cause the guides to function correctly. This adjustment is more necessary on older machines. Too much space can, however, give as much trouble as too little.

Check the space between each guide bar. There should be no contact between the bars when they are shifting, and the threads must have clearance. In changing to heavier yarns, this space may need to be increased.

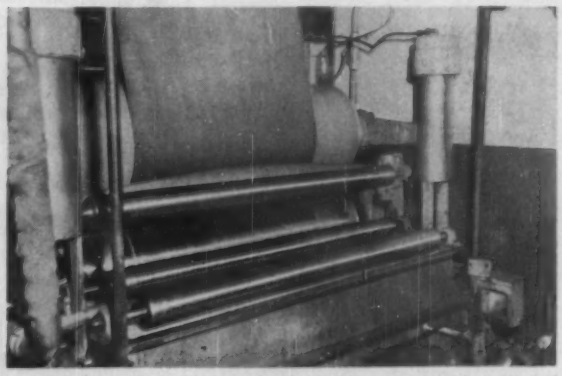


NEW BUILDING for drying range hugs the railroad and actually is built partly on railroad right of way. Shoring the fill with a 12-in. concrete wall preserved the trackage and opened up an area big enough for the range building.



DOUBLE DRIVE on this scray was worked out from one source of power through the jackshaft at top center. The drive in foreground shown is synchronized with the pad; the drive at rear turns delivery rolls twice as fast to permit sewing on of rolls.

DELIVERY END of the range is equipped with a swing and a Simpson batcher for continuous batching of rolls.



PAD is a 15-ton Morrison, equipped with an extra-large jacketed box, a series of dip rolls, and a circulating pump. Kerr does both finishing and dyeing on this range; so it needs a versatile pad.

Kerr's New FINISHING RANGE

- Getting a full-size finishing range consisting of cans, pad, and tenter into a limited space posed some problems for Kerr Bleaching & Finishing Works at Concord, N. C.

- With good engineering and some borrowed railroad right of way, the plant was able to install a modern versatile range in a relatively small area.

By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

KERR BLEACHING & FINISHING WORKS, Concord, N. C., needed a new finishing range but had a problem about where to locate it.

Its engineers got to work with the Southern Railroad and shored up a spur-track fill with a 12-in. reinforced concrete wall nearly 200 ft. long. Located parallel to and 16 ft. away from an existing outside wall, this new boundary became the outer wall of the range housing. The building proper is of steel-girder construction with 6-in. slag-block curtain walls.

The roof is a built-up felt-and-tar type. Because nine bays of the roof coincide with the second-floor level of the main plant, the roof is constructed to carry 150 lbs. per sq. ft. and thus can be used as a floor if further expansion of the second story is needed.

Over the area laid out for the entering end of the tenter, the roof was raised to accommodate a stack of 21 stainless-steel cans. This raised area

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Repair Orders and Job Records Keep MAINTENANCE Men Alert

• In an attempt to make the dollars spent for maintenance repairs and labor go as far as possible, Alabama TOE members have set up standard order procedures for each repair job

ALABAMA TEXTILE OPERATING EXECUTIVES considered only two maintenance subjects in their most recent meeting: (1) methods of assigning repair orders to shop employees and (2) keeping repair-cost records. Specific reports were given by men from 11 mills on how they handle the repair orders and keep the cost records. Five reports show what's being done:

Mill A—"We have printed shop-work requisition sheets that foremen or overseers fill out for each part we send to the shop for repairs or any part to be made. The sheet has a space for a special job number on the left-hand side at the top. On the right-hand side, there's space for the given job.

"The left-hand side of the sheet also shows the mill name, department, section, and machine. There's space for a description of the job, date of requisition, date the job is started, date the job is to be finished, and date the job is actually finished.

Foremen Direct All Work

"Shop foremen post all cost information on the sheet, and the sheet is turned into the office. All shop-work cost is discussed at our weekly meeting of supervisors."

Mill B—"Day-to-day repair orders are assigned to shop employees by one of our shop foremen. The master mechanic outlines the schedule of work in general to the supervisors; and they, in turn, assign the men who are under their supervision to particular jobs.

"The assistant shop foreman has charge of plumbing, carpentry, and electrical repairs. The machine-shop foreman supervises all work in the shop such as welding, bench work, lathe work, etc.

"No cost records are kept on relatively small jobs done by machine-shop employees. However, cost records are kept on major repair jobs if the size of the job and the cost of it warrant a detailed cost record.

"When cost records are necessary, the maintenance order is prepared by the general superintendent. The order is assigned an accounting number, and copies of this order are sent to all department heads who have anything to do with the repair work. Copies go to people receiving supplies and material and to those who furnish labor.

"Supplies and materials used on a repair job are charged to the maintenance order by the supply-room clerk. Office accountants keep these costs separate from other supply or material costs.

"If labor is to be charged to a specific maintenance order, a notation is made on the time card that the employee's time is to be charged, and each week the payroll department summarizes by numbers the cost of labor charged to maintenance orders.

Supervisors Keep Up With Work

"Then it's fairly simple for the accounting department to separate maintenance-order cost by labor and material. The status of maintenance-order cost is published each month so that all supervisors concerned can keep up with repair work being done in the mill."

Mill C—"We use two methods in assigning repair orders to employees.

"Method No. 1 covers ordinary repairs. We pass orders for machine repairs, electrical trouble, and some building repairs to the shop foreman. He assigns an order to the person that can do the job best.

"Method No. 2 covers major jobs and extraordinary jobs. These job orders are handled from the master mechanic's office. The master mechanic assigns these jobs to employees skilled in various jobs.

Jobs Prorated by Departments

"To keep cost records, each man is listed on his time card by his specific job: welder, electrician, painter, carpenter, mechanic, etc. The time card is sent to the mill office at the end of each week.

"Regular jobs are charged to service-account numbers and are prorated to various departments.

"Job numbers are assigned to all extraordinary jobs. These jobs are numbered under Categories A, B, C, D, etc., and a complete file of them is kept in the shop. On all jobs of a capital-expenditure nature, we use Categories 1, 2, 3, etc."

Mill D—"Work orders from departments throughout the mill are received in the mechanical-department office. The date and time an order is received are stamped on the back of the order. Then the order is given to the shop foreman to issue to employees in the shop.

"The foreman records the job and the time the work is started on a work-order sheet. When the job is finished, he records the time it's finished and the materials used.

"Completed orders and work sheets are returned to the mechanical-department office, where the cost for each job is figured and recorded. The completed orders and work sheets are then filed for future reference.

All Labor Is Charged to a Job

"If the first-shift man, for example, does not finish a job, the time he stops work is recorded on the work sheet. Then the second-shift foreman makes a new work sheet and records the time the second-shift employee starts and finishes the job. In this way, the time each man spends on a job is kept.

"Each man in the department has his own work-order sheet; and if two or more men are assigned to the same job, the total manhours are kept on each job."

Mill E—"When a repair order is given to the shop foreman, he appraises the job and selects a man to do it. The foreman uses his own judgment and knowledge of shop employees' ability in selecting a man for a given job.

"Highly skilled employees are assigned to difficult jobs."

LOOM with many improved features is started by Weaving Overseer E. L. Crockett.

Improvements at Florence Include REBUILT LOOMS

• At Florence Cotton Mills, Florence, Ala., a number of K-model looms have been rebuilt, with some features of X-model looms being added. The result is a very efficient and easily maintained loom for the weaving of sheeting and other plain fabrics.

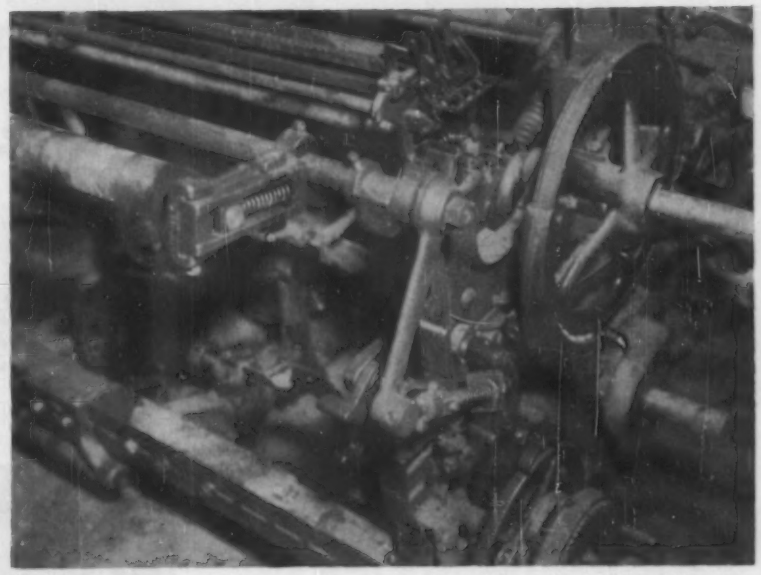
By **WILMER C. WESTBROOK,** Assistant Editor, TEXTILE WORLD

BATTERY takes an 8¾-in. quill. Battery-hand Jeanette Johnson fills 70 batteries.

FLORENCE COTTON MILLS, Florence, Ala., is rebuilding some 40-in. Draper K-model looms to increase its production of sheeting and rayon-filled fabrics.

Originally belt-driven, the looms are being equipped with disk-friction drives and ½-hp. motors. The motor switches are placed on a rail above the looms. The overhead switch arrangement eliminates under-floor conduits, and the switches can be turned on or off from the front of the loom.

The looms are taken down and all parts checked thoroughly for wear. All parts, including loomsides, girts, and breastbeams, that are not in new condition are replaced. The looms are being aligned throughout. Back boxes,



NEW PARTS added to the looms include Durkin preventers and spring-type crank arms.

lay ends, and shuttle races are squared and aligned, batteries are gauged, and frames leveled.

Durkin Preventers Are Used

The looms are placed on felt pads that are not cemented to the floor or to the loom foot. The pads are held in place by vacuum, using the same principle as the suction cup. The original Roper let-off motions are being used, with all worn parts replaced. Durkin thin-place preventers are being added to the whiproll assembly. The four-bank sliding feeler-bar warp stop motions are being reworked with new bars and fingers added.

To lessen the impact of slam-offs and insure smoother operation, the looms are being fitted with spring-type crank arms. Although it is not planned to use more than two harnesses on the looms, they have auxiliary camshafts. The harnesses are lifted by boss roll tops.

A change-over from 8- to 8¾-in. quills is being made by using a special shuttle. The shuttle boxes and lay ends are not being changed, but some of them are being replaced. The worm-drive, high-roll take-up motions are being thoroughly overhauled; the take-up rolls are rubber-covered.

The rebuilt looms are being started at 165 ppm. The speed may be increased later if conditions are favorable. A 20-in. warp beam containing 1,900 ends of 19s yarn will run about two weeks. The loomfixer changes the warps on his section. Warp tying is done on a stationary tying-in machine located in the slasher room.

In addition to the K-model looms, Florence Cotton Mills also has 211 E-model Draper looms of 40-in. width. These looms are belt-driven and operate at 160 ppm. A typical fabric woven at Florence is 40-in. 48x44 sheeting of 3.75 yds. per lb. The cotton used is 1 1/32-in. fiber.

Rayon-filled cloth is also woven for the clothing trade. Both bright and dull spun rayon is used for the filling, and an all-cotton warp is used in this fabric. Loom efficiency at Florence is above 94%, and the second-quality cloth is less than 6% of total production.

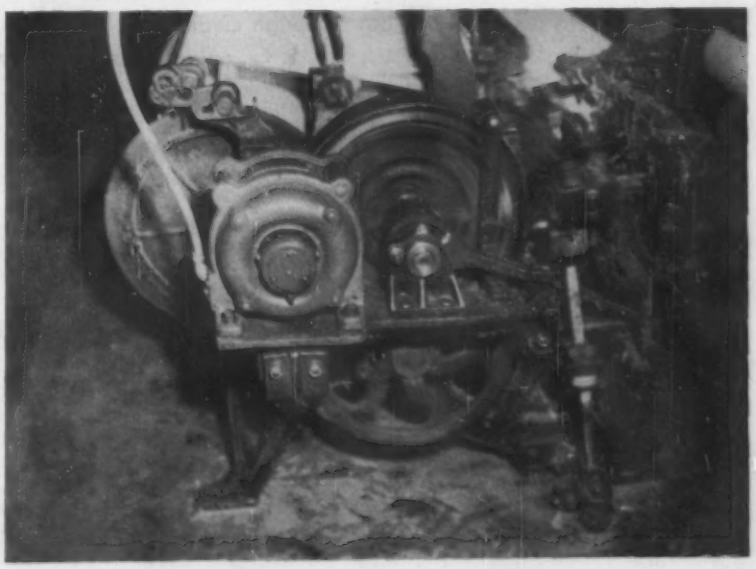
Other Machinery Is Moved

Each loomfixer has 70 looms to repair and maintain. Although the K-model looms are being rebuilt, once they are in production the loomfixer is responsible for preventive maintenance and overhaulers are not used. Each weaver has 53 looms, but the batteryhand jobload will vary according to running time per quill. An average battery job is 70 looms.

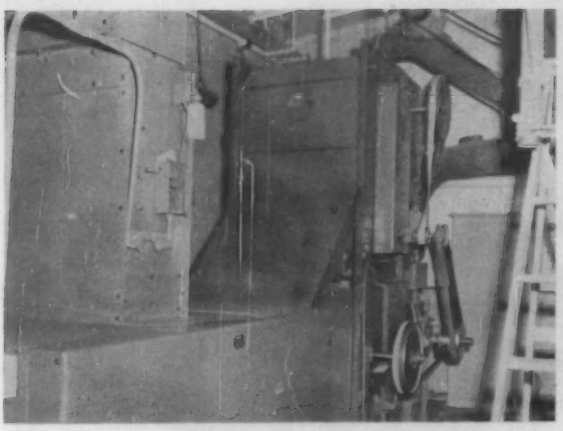
Lighting for the weave room is by fluorescent units. An atomizer-type humidity system is used and a relative humidity of 80% is maintained.

In addition to rebuilding some of its looms, the mill has recently rearranged much of its preparatory machinery. The material flows in a straight line from opening through carding and spinning; then to slashing, weaving, and the cloth room. There is no backtracking of materials.

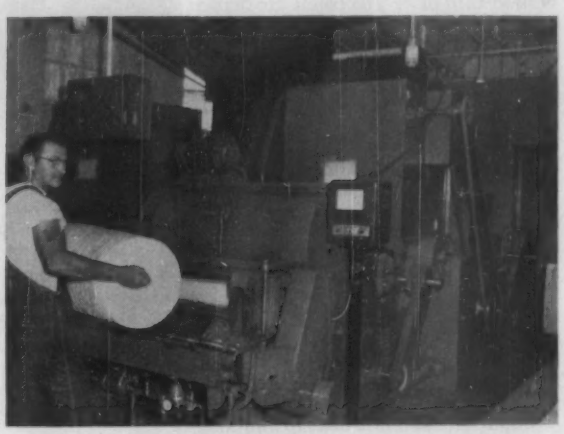
The new arrangement of the machines, the improvements to looms and other equipment, and better materials-handling methods have increased the efficiency and versatility of the mill.



DRIVE consists of ½-hp. motor and disk-friction clutch. Looms were formerly belt-driven.



FINAL CLEANING is done by a No. 11 condenser over a No. 16 opener, a No. 11 condenser over a No. 12 lattice opener, and a No. 11 condenser over the overflow box of a Model 2 automatic-feed conveyor. Reworkable waste is fed in at the No. 16 opener.



SINGLE-PROCESS F6 PICKERS were installed to make 14.5-oz. laps. The three-blade beater in the front section runs 935 rpm.; the two-blade back beater runs 945 rpm. Front-fan speed is 1,010 rpm.; back-fan speed is 935 rpm.

A Look at Highland Park's New OPENING and PICKING

To assure gentle but thorough cleaning of its high-quality cotton, Highland Park Mfg. Co., Rock Hill, S. C., enlarged and modernized the opening and picking departments. Highlights—

- New machinery layout
- Pneumatic feeds
- Additional cleaners
- Extra condensers

By WILLIAM G. ASHMORE, Associate Editor, TEXTILE WORLD

Highland Park Mfg. Co., Rock Hill, S. C., processes Strict Middling 1⅛-in. cotton into combed fabrics. Cotton of this quality is an important cost factor, and waste must be kept to a minimum. The management, as part of a general modernization program, rebuilt the opening room to assure gentle but thorough cleaning of the stock.

The old opening room had a short line of equipment consisting basically of four Kitson hoppers, a belt conveyor, two Superior cleaners, and two vertical openers. From here, the cotton went to a rake conveyor that fed two 1916 H&B pickers.

All of this equipment, including the pickers, was thrown out; and the room was enlarged. An entirely new line of opening and cleaning equipment, containing several extra condensers and cleaners, was installed. Some of the equipment is shown here.

Maintenance Tips for WOOL Spinning Frames

For ideal production, wool spinning frames should have a regular schedule of inspection that includes—

- **Delivery rolls**
- **Rings**
- **Scavenger rolls**
- **Spindles**

A FEW YEARS AGO, an overseer of spinning would overhaul a mule and run it empty for a short time. When he was ready to put roving on the mule, he would watch the mule run out and in. In 99 times out of 100, the spinning was improved. Cared for in a similar manner, the ring spinning frame today should do a much better job.

Maintenance programs have suffered in the last few years because woolen mills were operating six and seven days per week with less-experienced help. Some mills are now setting up maintenance programs.

As a first step in a regular maintenance program, the delivery and draft rolls should receive attention as often as needed. Because cleaning rolls takes time, the use of cleaners is a good preventive maintenance measure.

Keep Fluted Rolls Clean

If fluted rolls are run without cleaners or they are not cleaned, emulsion, oil, and lint are soon deposited on the rolls. This accumulation lifts the press rolls from the boss rolls and allows the roving to break and make uneven yarn.

Periodic attention should be given to the fluted rolls. They should be taken out of the frame to clean the bearings of waste. This is also a good time to check on roll stands.

If twister-tube nibs are found grooved and worn, they should be replaced. Proper setting should be given to twister-tube nibs. Worn or grooved nibs will reduce the effective gripping power of the nippers. Inspect the twister head for grooves and worn pins.

Give the same inspection to the traverse motion. Careful maintenance of the traverse motion will prevent the grinding of fluted rolls.

Bolsters are often neglected. Periodic oiling is not enough for cast-iron bolsters. They should be removed at least once a year, wiped off, and cleaned in a solvent such as kerosene.

Syphon oil from the bolster case, clean it with a swab before the spindle is replaced in the case, and add new oil. Plumb spindles once a year, and correct those out of plumb. Use a bobbin with a wooden plug attached to set spindles to the ring. This plug should be $\frac{1}{8}$ in. smaller in diameter than the inside of the ring and evenly balanced to avoid run-out.

Shim spindles not in the center of the ring with paper placed between the bolster seat and the bolster rail. If spindles are improperly centered, bobbin sizes will vary.

Some spinning frames have an oil well under the ring rail. Wicks lead to the ring, and lubrication takes place by capillary action. Make sure that the reservoirs are kept full at all times to provide adequate lubrication.

A better system has an oil reservoir at the rear and head end above the ring rail to give a constant, regulated flow of oil. This system helps get higher spindle speeds and less end breakage and can be installed on existing machines.

Rewick and Clean Rings

Rings need a periodic rewicking and cleaning. When the rings begin to show a wavy surface or start to form grooves, they can be sent back to the manufacturer for refinishing. An extra set of rings is needed to replace a complete frame while the rings are being rewicked or reground. If rings show a wavy surface and form grooves, the condition is mostly due to poor lubrication.

Some spinning frames have a scavenger roll where the operator has to break or cut each lap that has accumulated on the roll. Operators have difficulty stripping the roving waste off the scavenger rolls, particulary on synthetics and wool blends.

There is a scavenger that eliminates this difficulty. The rolls, which are open at both ends and made to taper at each end, operate in pairs and are driven by short tapes from the front rolls. The rolls may be easily stripped of waste. A suction device may be applied to the frames instead of scavenger rolls.

In some mills, standard tapes are being replaced with a well-designed tape sheave. Some sheaves are prelubricated and will run for years without attention.

Keep Tape Free of Lint

The spindle tape will accumulate a layer of lint at times. If this occurs, the band should be cleaned or replaced with a new one. Lint can build up until it equals the thickness of the tape. This condition will cause spindle slippage, reduction of yarn per bobbin, and twist variation.

In replacing broken tapes, be certain that the tapes are all cut to the same length. Small differences in lengths of tapes will cause variations in the twist and often contribute to lighter doffs when the operator might change the pick on the builders because of a few large bobbins.

Give consideration to wooden bobbins. Loose or missing ferrules in the top and bottom of the bobbin will make bobbin vibration. This condition results in large and small bobbins and slack twist and will decrease the efficency of the frame. Chipped heads will cause difficulty in spooling and winding and will damage spinners' hands.

To prevent excessive wear and stretching, chains at the head end should be removed at the annual overhaul and flushed in a solvent to remove the dirt accumulated between and on the links. A worn or stretched chain can make spindle rails jump and float. Don't use too much grease on the head-end bearings.

In some mills there are roving

CONTINUED ON PAGE 186

From a talk by Louis Bussiere, Davis & Furber Machine Co., at the Woolen Spinners' Guild of the National Association of Woolen and Worsted Overseers.

Alabama Spinners Tell How To Control BOBBIN BUILD

Mills representing more than 1,000,000 spindles participated in the fall meeting of the Textile Operating Executives of Alabama. The spinning session covered—

- Control of bobbin build and weight
- Umbrella creels and suction cleaning

VARIOUS METHODS of maintaining proper package build and weight were described by 18 of the 19 reporting mills. The same mills also told how to keep bad bobbins out of spinning. Typical reports are:

Mill A—"We keep builder motion in good working order, check picks every 8 hrs. for correct yarn number, and keep chokes off gears. Our doffers report defective frames to section men.

"To keep out bad bobbins, we make the doffer primarily responsible. Also, winder operators and spinners are instructed to look for bad bobbins. The second hand follows up to see that all operators are properly instructed and that bad bobbins are dropped in a special box."

Mill B—"Once a month the fixers collect from each frame one full bobbin and one bobbin holding two layers of yarn. These bobbins are identified; and the overseer and second hands check each package for stroke, position of yarn, taper, and appearance.

"The overseer writes an order instructing the fixer to work on each defective frame. After repairing the frame, the fixer turns the order over to the second hand, who checks the work and reports back to the overseer.

"Yarn men, fixers, and second hands are instructed to be constantly on the watch for bad bobbins and to throw them out when found."

Complete Doff Is Weighed

Mill C—"The entire doff on each frame is weighed once a month. Warp frames are doffed on a rigid schedule to control weights. Builds on filling packages are checked periodically for uniformity.

"Doffers throw out bad bobbins as they are found, and later someone checks through them to see if they can be repaired."

Mill D—"We set up standard package weight, stroke, and traverse for each ring size. The package weight varies between fine and coarse numbers. The same lay gear is run on all frames spinning the same number. Ring diameter and picks are varied to correct build.

"Using these standards, we check and adjust the frames each week. Warp frames are divided equally among section men, who check their assignment weekly. If frames not assigned to one section man fail to build correctly during his shift, he adjusts them and informs the section man responsible for the faulty frames as to his action.

Doffers Work on Schedule

"Our doffers work on a schedule and are paid on a piece-rate basis that depends on each package having the proper weight of yarn. The doffer will complain if the bobbins are not standard weight. Scales are available for weighing the bobbins. The same procedure is followed for filling.

"We buy paper warp-spinning bobbins about once a year. A different color is specified each time we buy so that we can identify each bobbin as to age. The bobbins last about five years. All bobbins are inspected periodically for damage and thrown out if unfit for use."

Mill E—"We keep all chains operating with the same number of links, and we set one bobbin on the end of the frame each week to serve as a standard. Doffers are responsible for throwing out bad bobbins."

Mill H—"The standards department checks weights once a month. We pay by the doff, and our doffers list the time of day each frame is doffed. This procedure enables us to spot short doffs, since we know how long the frame should run between doffs.

"We check daily for bad builds. The spooler room reports frames that are not building properly. Each time a warp frame is doffed, the doffer puts on it a full bobbin and a bobbin with one layer of yarn. This procedure permits us to check the build of the frame, how full the frame was when doffed, and how the doffer pulled the frame. The frame is not supposed to be pulled on top taper. Also, the rail should be at bottom position when the frame is started.

"On each shift, the second hand inspects and takes down the two bobbins when the frame is doffed."

Inspection Form Is Used

Mill I—"Our spinning-frame maintenance program includes a printed inspection form that the second hand gives to the section man each day.

"The section man checks one frame each day for the items listed. The form includes the bobbin build. The completed form is turned over to the second hand, who inspects the frame, signs the form, and gives it to the overseer. The overseer then spot-checks the frames.

"In addition, the doffers place two full bobbins on pegs at the head of each frame for the overseer and second hand to inspect at any time."

Mill J—"The section man checks each filling frame with a ring gauge at the beginning of each shift. Warp frames are checked by observing the size of the package before each doff."

Mill K—"We have one builder man for each 100 warp frames. Each week spinners put a bobbin from each frame on a board; and the bobbins are inspected by the overseer, foreman, and builder man.

"The same procedure is used to check filling. We have one builder man for 84 filling frames.

"We have a standard stroke, taper, and pick for both warp and filling. Daily inspections are made. Once a month, each frame is checked for hanks per doff to insure proper yardage.

"Stopped-up bobbins are placed on

the center-creel boards and collected each shift. These bobbins are blown out and gauged, and the bad ones are taken out."

Mill M—"Our 289 warp frames spinning 2.85s to 23s are doffed on schedule. The running time is based on experience and studies. We use one man to service the builders on these frames.

"If a doffing schedule is used, there are times maximum package content must be sacrificed to maintain efficient doffer work assignments. However, we maintain consistent package size and greater production and have less downtime with the schedule in effect.

Standards Are Coordinated

"The schedule man uses standards and coordinates his efforts with the production department and the overseer in making changes. The builder man works closely with the overseer and schedule man.

"To control filling build and weight, the section man fills in a form after each change. The form shows the date, shift, time, frame number, total weight of doff, yards on bunch, shuttle size, and the name of the section man. The form is given to the supervisor, who makes spot-checks.

"We doff all filling in bags that are tagged with the yarn number, frame number, date, and doffer. The procedure enables us to trace defects to the source."

Creels and Cleaning

About half the mills have open creels, suction cleaning, and large-package roving. Most of them reported substantial savings in labor costs. Reports by mills are:

Mill A—"We have umbrella creels on 12 Gwaltney spinning frames. Spinners do not have top and bottom boards to wipe, but you need overhead cleaners. Roving is not stretched by the new creels.

"Large-package roving permitted us to increase spinners' work assignments from 9 to 12 sides for frames having 3-in. rings and 216 spindles. Roving operators' work assignments also were increased. At the same time, the large spinning bobbins helped us at the winders."

Mill D—"Large-package roving permitted us to increase spinners' work assignments about 10% when we converted from 10x5 to 12x6½ roving. The bobbins weigh 3.1 lbs. each."

Mill H—"We recently installed Pneumafil and umbrella creels on our warp spinning and are changing from 8x3½ to 12x6½ roving. We have not realized all the gains yet that we an-

CONTINUED ON PAGE 131

Effect of Curing Conditions On Resin Finishes

• Proper curing conditions are extremely important in producing satisfactory resin finishes. Here are the conclusions reached by the author on several phases of the curing operation.

By **SCOTT H. FOSTER**, Monsanto Chemical Co.

In order to determine the effect of curing conditions on wrinkle recovery and the loss in tensile and tear strength on an 80x72 cotton fabric, the following experiments were made.

A cyclic ethylene-urea resin (CEU) and a methylated methylol resin (TMM) were the basic resins used in the tests. No other materials except the catalysts were included in the formulas.

Fabric samples were treated with the resins in amounts that gave 2, 4, 6, 8, 10, and 15% add-on of resin. Drying was constant at 3 mins. at 200° F.

An afterwash, followed by overnight conditioning, preceded all tests.

Trials were made to show the effect of time and temperature of cure and the effect of varying the amount of catalyst.

Effect of Curing Temperature

For the CEU resin, curing temperatures in the neighborhood of 270 to 290° F. give the best all-round results in wrinkle recovery and residual tensile strength. The lower temperature favors tensile strength.

For fabrics treated with the TMM resin, curing temperatures up to 330° F. are required to get a degree of wrinkle recovery comparable to the CEU resins at 290° F.

Primary tests to evaluate the effect of curing temperature were made with resin formulas containing 10% organic-amine catalyst based on resin weight.

To find the effect of varying amounts of catalyst, trials were then made with 5, 10, and 30% catalyst based on the weight of CEU resin.

Results indicated that wrinkle recovery is not helped by catalyst in excess of 10% where resin add-on exceeds 3%.

Tensile- and tear-strength loss tends to increase as excess amounts of catalyst are added.

With the TMM resins, at curing temperatures of 330° F., the higher amounts of catalyst appear to improve wrinkle resistance. Tensile and tear strengths tend to become lower as catalyst concentration increases.

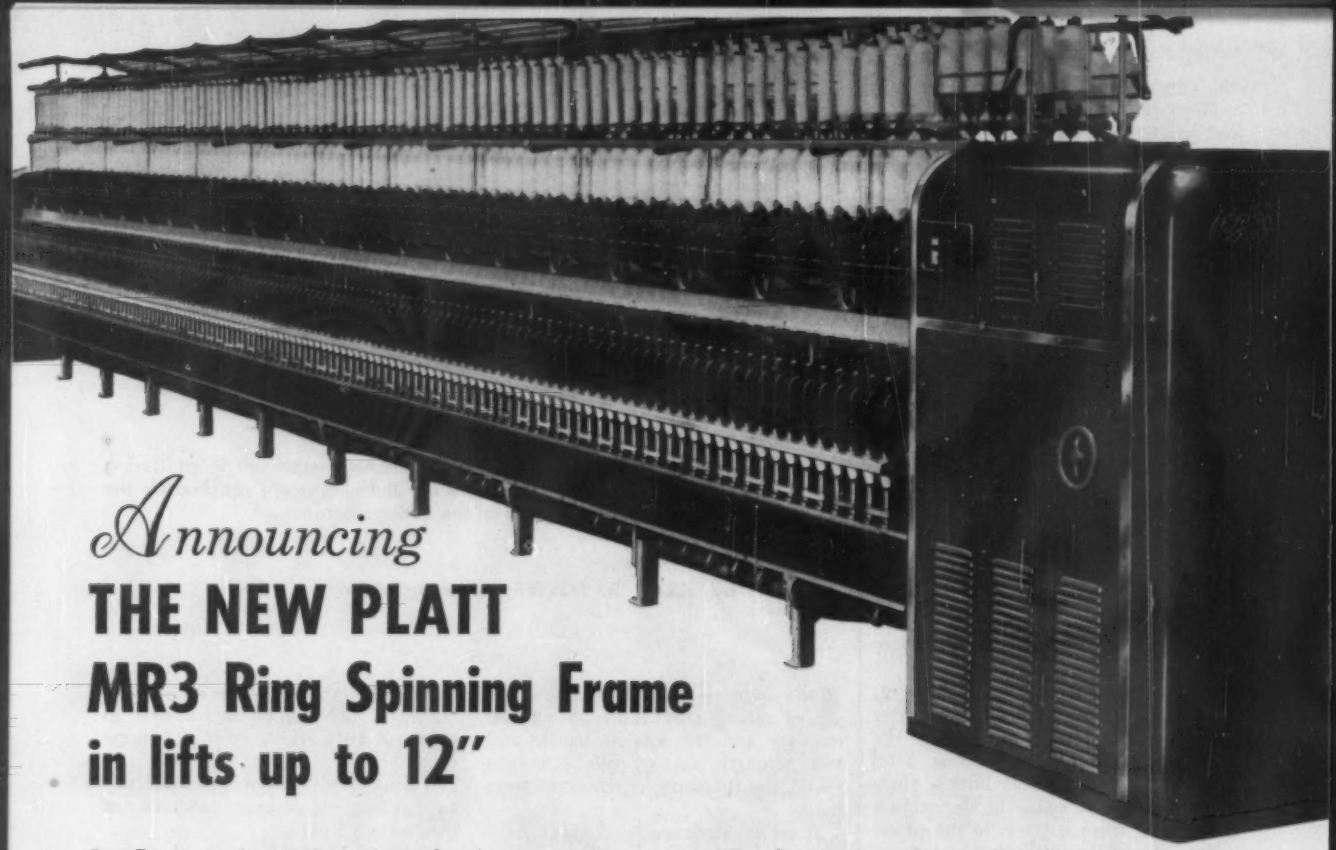
Effect of Curing Time

Tests made on fabrics treated with CEU resin with varying amounts of catalyst and resin and cured at 290° F. showed that with curing times of 1½, 3, and 6 mins. there was no difference in wrinkle recovery, tensile loss, or tear loss. The same holds true for the TMM resins.

Using curing conditions most favorable to each resin, samples were treated with varying amounts of CEU and TMM resins. Wrinkle-recovery tests were initially better for CEU resins, but after five washings the wrinkle recovery dropped nearly to the level of the laundered TMM resin-treated fabrics. TMM resins appear to lose less in wrinkle-recovery properties than do CEU resins.

Tensile strength of the samples was slightly lower with CEU resins, but after five washes the tear strength of samples treated with CEU and TMM resins was essentially the same.

Conclusions are that each resin has an optimum curing temperature. Variations in the amount of catalyst are of less importance in amounts over 10% of resin solids. Extended curing times are of no benefit.



Announcing

THE NEW PLATT MR3 Ring Spinning Frame in lifts up to 12"

1. Increased speeds and productions
2. Inherent flexibility — all counts — all fibres
3. Higher overall efficiencies
4. Reduced operative work loads
5. Lower running and maintenance costs
6. Simplicity a keynote in design
7. Remarkable cleanliness
8. All lifts up to 12"

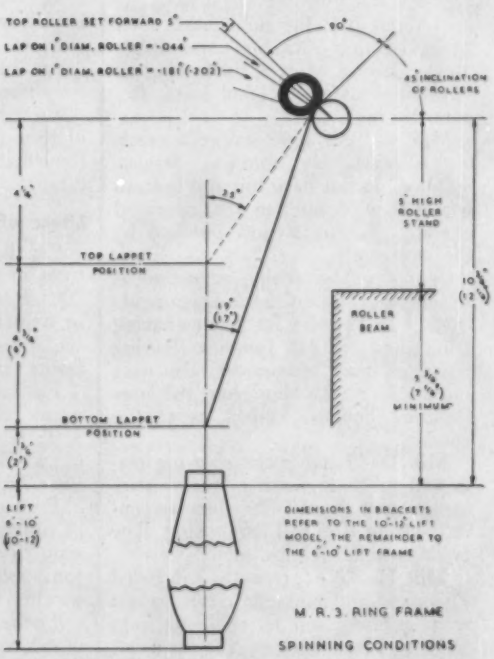
Many factors have been taken into account in the design of this new frame, but perhaps the most important are those relating to the spinning conditions. Very exhaustive trials, backed up by a detailed mathematical examination of the problem, were undertaken before such specifications as delivery angles of the yarn, lappet movement and roller inclination were finally established. A very good agreement between theory and experiment led us to adopt the following values as standard:

Inclination of drafting rollers — 45°.
Lappet movement — $4\frac{3}{4}$ in. (6 in. to 10 in. lift) and 6 in. (10 in. to 12 in. lift).
Roller delivery angle at top of lift — 35° to the vertical.
Roller delivery angle at bottom of lift — 19° to the vertical (6 in. to 10 in. lift) and 17° (10 in. to 12 in. lift).

While we have standardised on and strongly recommend a 45° inclination of the drafting rollers, a 35° inclination can be employed if the customer has a preference for this smaller angle.

The improved spinning conditions provide more favourable spinning angles, a lower yarn tension, a reduced end breakage rate and a better balanced yarn balloon throughout the whole of the package build.

All these factors have enabled traveller speeds and spindle speeds to be raised quite substantially. As a result, production is increased, except in those cases where the front roller delivery is the limiting factor.


TOP ROLLER SET FORWARD 5°
LAP ON 1" DIAM. ROLLER = ·044"
LAP ON 1" DIAM. ROLLER = ·18" (·202")
90°
45° INCLINATION OF ROLLERS
5" HIGH ROLLER STAND
35°
TOP LAPPET POSITION
19° (17°)
ROLLER BEAM
BOTTOM LAPPET POSITION
LIFT 6"-10" (10"-12")
DIMENSIONS IN BRACKETS REFER TO THE 10"-12" LIFT MODEL, THE REMAINDER TO THE 6"-10" LIFT FRAME
M. R. 3. RING FRAME
SPINNING CONDITIONS

LOCAL SERVICE GUARANTEED BY

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Alabama TOE Reports on 3 CARDING Developments

Members from 19 mills met at Auburn for the fall meeting of the Textile Operating Executives of Alabama. During the carding session, they talked about—

- **New cotton oils for reducing fly**
- **Experiences with large sliver cans**
- **Advantages of roving-frame stop motions**

1. Cotton Oils and Softeners

The use of U.N.O. C-7 cotton-fiber treatment for the reduction of fly was reported by only one mill. However, several mills use other kinds of softeners, such as mineral oil. Reports by mills are:

Mill H—"We tested approximately 10,000 lbs. of stock with 2% U.N.O. C-7 with the following results:

"1. Break factor for 21s warp was 1930, compared with 2055 for yarn made from regular stock.

"2. There seemed to be less static.

"3. Less dust was apparent on all machinery.

"4. No difference was noted in the amount of waste produced.

"5. Ends down were 39.5 per thousand spindle hours, compared with 43 for yarn made from regular stock.

"6. No rust formed on machinery.

"7. Production remained the same.

"Results of tests on stock treated with 2% U.N.O. X1 concentrate are:

"1. Break factor for 21s warp was 2023, compared with 2092 for regular stock.

"2. There was less static.

"3. There was less dust.

"4. Waste produced remained the same.

"5. Ends down were 45.7 per thousand spindle hours, compared with 39 for yarn made from regular stock.

"6. Machinery did not rust.

"7. Production was not affected."

Mill K—"We use 0.1% mineral oil on our warp cotton applied at the blending feeders. Fly is reduced at carding but increases at spinning. With a high humidity, our cards load up faster."

Mill S—"We tested 2,000 lbs. of low-grade cotton with a Fibacon formula consisting of 10 gals. of water, 10 gals. of Fibacon, and 6⅔ gals. of liquid tint. In our opinion, the treatment cut down dust, fly, neps, and waste."

2. Large Sliver Cans

Large sliver cans are favored by four mills. The others report no experience.

Mill F—"In changing from 12x36 to 14x36 cans, we increased doffing time 15% but have not yet changed work assignments."

Mill N—"We converted from 12x36 to 18x42 cans and expect to cut our labor force by one-third. Our doffing cycle increased from 40 mins. to 2 hrs. No mechanical difficulties were experienced."

Two mills reported from the floor as follows:

Mill 1—"Before changing to 16x42 cans, our card tenders ran 36 or 37 cards each; now they are running 56 or 57 cards each. We make a 70-grain sliver at 12½ lbs. per hr. and doff three times per shift. Doffers push two cans at once to the drawing. Cost was reduced 20%."

Mill 2—"We use 18x42 spring-bottom cans that permit one man to run 56 cards. There is less waste at drawing."

3. Slubber Stop Motions

Five mills report results from the use of stop motions on slubbers as follows:

Mill C—"Work assignments are approximately the same, there is slightly less waste, and maintenance is practically the same. Quality was improved by eliminating 'snow storms.' There is no difference in production."

Mill D—"Work assignments are the same and waste is slightly less; we require additional maintenance. Quality has improved, but production has not changed."

Mill F — "We recently installed Adams stop motions but have not had time to figure work assignments. Substantial savings were made in front waste by stopping flying ends. Singlings, doublings, and loose fly no longer get into adjacent ends.

"Production was increased because the frame can be started quicker after a stop. The tender can attend to other duties instead of watching constantly for ends down. Little maintenance is necessary."

Maintenance Cost Is Low

Mill I—"Installation of stop motions did not affect work assignments because the assignments already had been increased as much as feasible. Waste was reduced appreciably.

"The stop motion should be checked daily for bent wires and wires not working properly. However, time and money spent on maintenance is low if regular inspections are made. Maintenance is done by regular section men.

"Quality improved materially, but production is somewhat lower because of a slight drop in machine efficiency. However, the decrease in the number of ends down overcomes some of the loss, which we think is caused by letting the frame stand longer than necessary.

"With stop motions, the operator knows the frame will not 'tear up' when an end comes down. He tends to leave the frame standing while he finishes doffing. We believe this loss in efficiency can be overcome by training the operators more thoroughly."

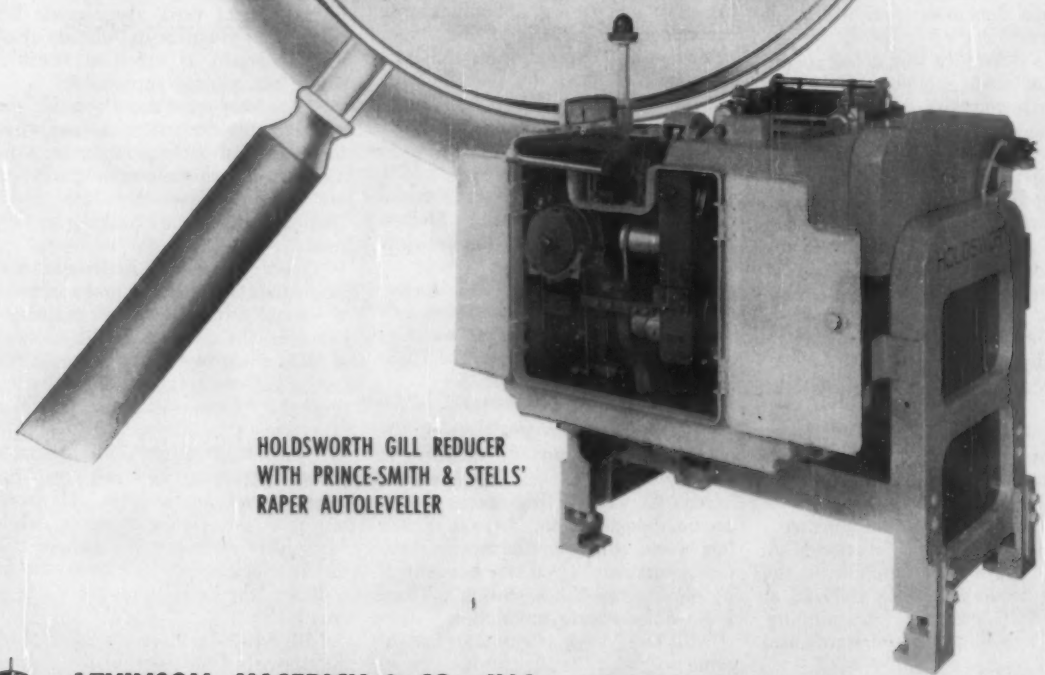
Mill M—"We have increased work assignments from four to five frames for our 10x5 slubbers on 1.50-hk. roving. Waste reduction is negligible. We have had no maintenance problems in three years. Quality has definitely improved."

HOLDSWORTH GUARANTEES CONSTANTLY LEVEL SLIVER

**Don't fail to read the fine print*

The French Worsted Company of Woonsocket, R. I. reports:

"All drawing sets are equipped with the Holdsworth (Gill Reducer with Raper) Autoleveller which cuts down the long term evenness by half. Use of the Autoleveller has been instrumental in enabling the company to reduce the number of passages and at the same time maintain quality standards."



HOLDSWORTH GILL REDUCER WITH PRINCE-SMITH & STELLS' RAPER AUTOLEVELLER

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Latest Tips on Handling DACRON-COTTON Blends

The blend of 65% Dacron with 35% cotton has assumed an important position in today's market

Early spinning, weaving, and finishing difficulties have been largely overcome; and many fabrics made from this blend are now available

THE DEVELOPMENT of the 65% Dacron-35% cotton blend is the result of many trials and not a few errors in the early stages of experiment. The first yarns made of blends of Dacron with cotton left a good deal to be desired in spinnability, strength, and evenness.

The first fabrics made from these yarns were not satisfactory from the mill's standpoint because of the high percentage of seconds. From the consumer's viewpoint, the pilling characteristics exhibited by the early fabrics were most objectionable. And the dyer had his troubles with these blends.

But the fabrics were basically sound in many respects and have justified the work necessary to iron out the difficulties mentioned.

Laboratory and end-use tests showed that at least 50% Dacron is necessary in a Dacron-cotton blend to get any real improvement in the yarn. The optimum ratio appears to be a 65%-35% mix when qualities of strength, dimensional stability, ease of care, press retention, abrasion resistance, and low static buildup are considered.

Blend at the Drawing Frame

Dacron's physical properties differ from cotton; so it is not practical to blend the fibers during picking and carding. They are picked and carded separately and then blended on the drawing frame.

Dacron is supplied in staple of 1¼- and 1½-in. lengths for blending with cotton. It has a fairly regular mechanical crimp and is finished so as to work well through processing without additional oil.

Picking is done on a one- or two-process picker equipped with Kirschner beaters. If a three-beater picker is used, it is generally desirable to use a Buckley or two-blade beater in the breaker section.

In carding, rayon-type lickerins are desirable and a fancy roll is necessary for 1.25- and 1.5-den. staple. The cards should be set properly and grinding schedules adhered to.

Drawing is satisfactory by the three-over-four or four-over-four methods, with either cushion or metallic top rolls. Generally, both breaker and finisher drawing are necessary to obtain a suitably blended fiber for the roving frame.

For fine-count yarns—40s to 60s—it is well to draw the 100% Dacron once before blending it with the combed cotton.

Either standard or long-draft roving frames may be used for the Dacron-cotton blend, usually with a lower twist multiplier than would be used for cotton alone.

Drafts of 25 or less on long-draft frames and 12 or less on standard frames produce the best yarns. A twist multiplier of 4.00 at the spinning frame has produced the best results.

Some early drafting difficulties have been overcome by the development of a new finish for the Dacron fiber that reduces the need for supplementary lubrication.

Sizing Methods Improved

Early sizing formulas did not produce satisfactory results. The early yarns were weak, and poor slashing left them fuzzy; but improved formulas on better yarns have overcome most of the difficulties. Polyvinyl alcohol is the base for a slashing compound that also includes potato starch, a gum, and a wax. All types of can-drying slashers have been used with success.

Although Dacron-cotton fabrics may be scoured, bleached, dyed, and in most cases finished on normal equipment by ordinary methods, a few points in their handling should be emphasized.

Desizing is done with enzymes or dilute sulfuric acid by conventional means. Scouring is best done at low temperature—100 to 120° F.—for the preliminary scour. If the goods are badly stained, a more-active scour can be given; but the bulk of oil and dust should be removed at the lower temperature to prevent its being set in the fabric.

Very dirty goods should not be heat-set before scouring.

If it is necessary to mercerize the cotton in the blend, this process can be carried out normally as long as temperatures are kept low.

Bleaching can be done with sodium chlorite and nitric acid, but any bleaching method should be tested under individual plant conditions.

New Process Helps Dyeing

Dacron-cotton blends can be dyed with vat dyes for the cotton and disperse dyes for the Dacron to give thoroughly washable fabrics. Disperse and direct dyes in a one-bath process are more economical and satisfactory for some end uses. Aftertreated direct dyes and developed colors improve the fastness of the cotton component.

The Thermosol method of dyeing Dacron is relatively new and produces good results. In this process, the Latyl series of dyes is used. They are applied by padding on the goods along with a penetrant and a thickening agent to prevent color migration.

After the color has been padded on, the fabric is passed through a dryer at approximately 235° F. and into a roller-type hot-air oven where a temperature of 390 to 410° F. can be maintained. The cloth is kept in the oven for 60 to 90 secs., during which time the dye diffuses thoroughly in the Dacron fiber.

The cotton is then vat-dyed by suitable continuous processes.

The advantages of the method include:

Savings in labor and materials

Continuous operation

CONTINUED ON PAGE 186

From a paper delivered by A. Descheemaeker, Textile Fibers Dept., E. I. du Pont de Nemours & Co., Inc., before the Textile Quality Control Assn.

Increase Roving Bobbin Capacity up to 37%

WITH *NEW* SACO-LOWELL 12"x7" EXTRA RUGGED FLYERS AND IMPROVED JUMBO CONE ASSEMBLY

The new Flyer is strong enough to make a 12" x 7" package on standard 12" x 6" roving frames without decreasing speed or changing other standard parts. It will run without distortion at speeds up to 735 rpm. In many cases, this new flyer permits the building of a bobbin holding 60 to 62 ounces of roving, which amounts to a 37% increase in bobbin capacity. The cost of equipping standard roving frames with these new 12" x 7" flyers is so reasonable that they pay for themselves in a comparatively short period of time.

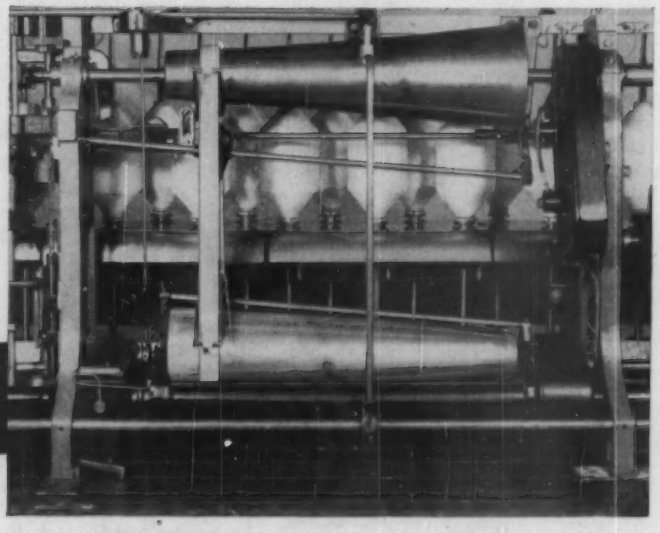
Jumbo Cone

The need for additional power to drive long, large package roving frames has been solved by Saco-Lowell engineers increasing cone speed 33% and cone size 50%. The new Jumbo Cone assembly provides a driving element with sufficient power capacity to drive these frames at a very high percentage of efficiency. The new aluminum bottom cone which is also included in the assembly reduces belt slippage to a minimum.

Obtain

- √ Higher Efficiency
- √ Less Creeling in Spinning Room
- √ Less Re-Workable Waste
- √ Less Piecing

It all adds up to Increased Productivity per man hour!



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POINTERS for SUPERVISORS

How Overseers Can Uncover Employee Dissatisfaction

Worker dissatisfaction is like fire: the longer it burns, the more damage it does. But in the early stages, when an overseer could put it out with a minimum of damage, nobody—including the workers themselves—turns in the alarm.

How can you spot such dissatisfaction before it blazes out into the open? Here are some danger signs that should alert you.

By ERNEST W. FAIR

Dissatisfaction among workers and unhappiness with their jobs are seldom reported voluntarily to the overseer. In the early stages, employees themselves hide their discontent. Even when the second hands become aware of it, they feel that they should handle the problem or that they should keep quiet about it for fear of being blamed.

Yet such dissatisfaction is often caused by things that only the overseer can correct. And because bad morale not only affects the department's efficiency but also spreads to other workers, he needs to know about it at the earliest possible time.

The only way an overseer can beat the conspiracy of silence in the critical early stages is to keep a constant watch for signs of trouble. Experts in human relations agree that there are usually three symptoms of dissatisfaction that show up at once. They are (1) lack of interest in the work, (2) lack of discipline, and (3) lack of cooperation.

1. Lack of Interest in the Work

An interest in the work he is doing is a mark of a satisfied employee; and when this interest is lacking, something is wrong.

The solution to this problem is usually the overseer's responsibility. It is part of his job to do everything possible to create and maintain interest in the work to be done. When this interest lags, he should search for points where his own executive abilities have been lacking.

Greater interest in the job can usually be aroused by planning to avoid monotony wherever possible, by giving the employee a better picture of how his work fits into the over-all picture so that he will have a sense of accomplishment, and by making him understand that he as an individual is important to the department and that his work is an important contribution to the mill's end product.

2. Lack of Discipline

This symptom can mean one of two things: either something is wrong with the rules or the way they are applied, or you have hired an individual whose nature is to defy all discipline and try to influence everyone else to do the same.

If you have recently hired a new employee, you can look first to this second source of possible trouble. If a mill has enjoyed excellent discipline before the arrival of an individual, he is almost certain to be the cause.

You should also look closely into any possible changes in working conditions, the nature of the work, or other factors that may call for an immediate change in rules and regulations. Where no changes have been made for a number of years, this point may bear close examination when trouble starts.

The rules themselves should receive periodic examination. A lack of discipline can often be caused by rules and regulations that are much too strict for present conditions, by rules laid down from outside that are impossible to enforce or too difficult for employees to follow, or by changes in general rules that have been made by other firms in the area.

Such dissatisfaction often grows into a major problem in any mill whose management fails to keep pace with working conditions that exist in other plants in the area. Employees are usually well aware of such conditions and resent the fact that their own firm has not followed the trend.

3. Lack of Cooperation

Here's a sure sign that dissatisfaction exists. It may take the form of unwillingness to do anything other than the minimum required to hold onto their jobs, of being slow to perform given chores, or of doing a sloppy job.

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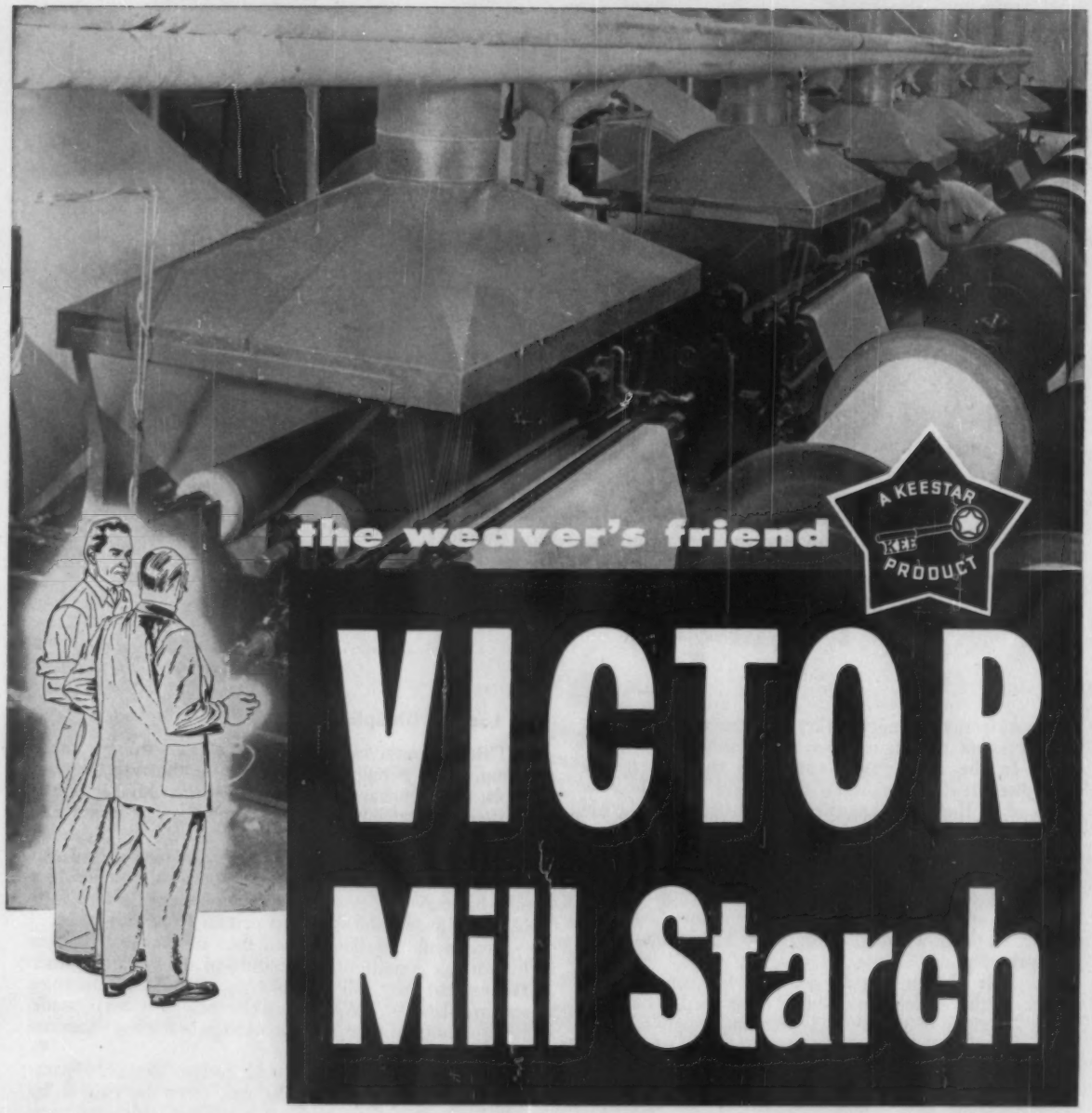

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POINTERS FOR SUPERVISORS

CONTINUED FROM PAGE 129

Any of these symptoms of dissatisfaction call for immediate action by the overseer. He should start looking into possible causes and remedies at the earliest possible moment before dissatisfaction has had a chance to spread among the entire staff. It is always much easier to correct a situation with a few individuals than with a whole department.

In making an investigation, he should always keep in mind that it is highly probable that the employees involved are not entirely in the wrong. It usually turns out that management or supervisors are at least partly to blame.

Being as impartial as possible on this point will help him arrive at a solution quicker and to come up with a more-workable plan for correcting the trouble.

Preventive investigations can often stop trouble before it starts. It's a good idea to take time out every now and then to look for conditions that are likely to cause discontent. Some overseers have set up a standard check sheet of all possible areas of employee dissatisfaction and use it as a guide for a check-up every six weeks or so.

An overseer needs to be alert to signs of trouble among the people in his department. Sometimes a bad condition has developed in plain sight but he hasn't been observant enough to see it.

He should make sure that there is leeway in his daily work schedule to permit such check-ups and observations. It is time well spent to avoid spending a lot more time and effort in the future to correct a situation that could have been spotted and corrected in a matter of minutes.

Dissatisfaction on the part of the average employee seldom grows out of nothing; it usually has a good basis of fact. If you maintain eternal vigilance against such situations, you can avoid them.

But when they have escaped you and the situation does arise, you should never delay working out an immediate solution to the problem. Minor employee dissatisfaction today can grow into very costly situations tomorrow. They are always much easier handled in their infancy than after they have grown to full size.

DEVELOPMENTS TO WATCH

CONTINUED FROM PAGE 6

WOOLEN AND WORSTED MILLS . . . may see good sales and earnings for the next several years, says Herman D. Ruhm, Jr., president of Burlington Industries, who attributes these conditions to these factors:

1. Productive equipment has declined to the point that overproduction is not the bugaboo that it was a few years ago. [See TEXTILE WORLD, Oct., '56, p. 86].
2. A healthy balance between supply and demand of raw wool.

In his opinion, woolen and worsted equipment has probably been excessively liquidated and this branch of the industry would be hard pressed to supply civilian and military needs in an emergency similar to that of 1942.

BLENDING FIBER MOLECULES . . . instead of fibers themselves may be one of the next major fiber advances. Dr. Carroll A. Hochwalt, Monsanto Chemical Co., reported to the American Chemical Society that Chemstrand Corp. and other research groups are trying to blend two groups of molecules in a solvent and spin them into a fiber that is a chemical blend of two present fibers. For example, cyanoethylated cotton, acetate, and other polymers have already been blended with Acrilan and Orlon. The resulting fiber has quite different properties from the parent fibers.

NEW-TYPE NONWOVEN FELT . . . made by American Felt Co. will soon improve filters used for filtration of aniline dyestuffs and pigments. The filter is composed of 95% McNamee clay and 5% carbon black. It's held together with the nonwoven fabric, which is a combination of Dynel and a thermoplastic binder fiber.

MORE WOOL FABRICS . . . may be sold this year if the Wool Bureau's big promotion campaign is successful. The theme of the promotion, to be handled by J. Walter Thompson advertising agency, is "Nothing Measures up to Wool."

Advertising will cover five separate campaigns, one each directed toward (1) mass education, (2) teen-agers, (3) men and boys, (4) fashion-conscious consumers, and (5) homemakers interested in blankets.

WOOL CARDING AND SPINNING

CONTINUED FROM PAGE 115

cradles when the aprons have been removed for scouring.

We use a 75- to 77-grain-per-yard Orlon sliver that does not draft. What settings do you recommend on Quick-Set rovers?

By opening up the cradles, Orlon can be processed at 95 grains per yard. Mills have run up to 125 grains per yard on 60-70s wool. Do not overcharge the machine. Open the aprons. Do not allow any twist to enter the sliver because a half turn will cause trouble. Open up the control and readjust the condenser between the back rolls and the entrance to the apron.

Are there any rules for ratch settings on Quick-Set rovers for various stock?

There are no rules. Eveness-tester results plus the overseer's judgment are the best guides. Some mills running cut nylon ratch 1 in. over the maximum length of the fiber. On Orlon and wool, you may ratch to cut or break some longer fibers.

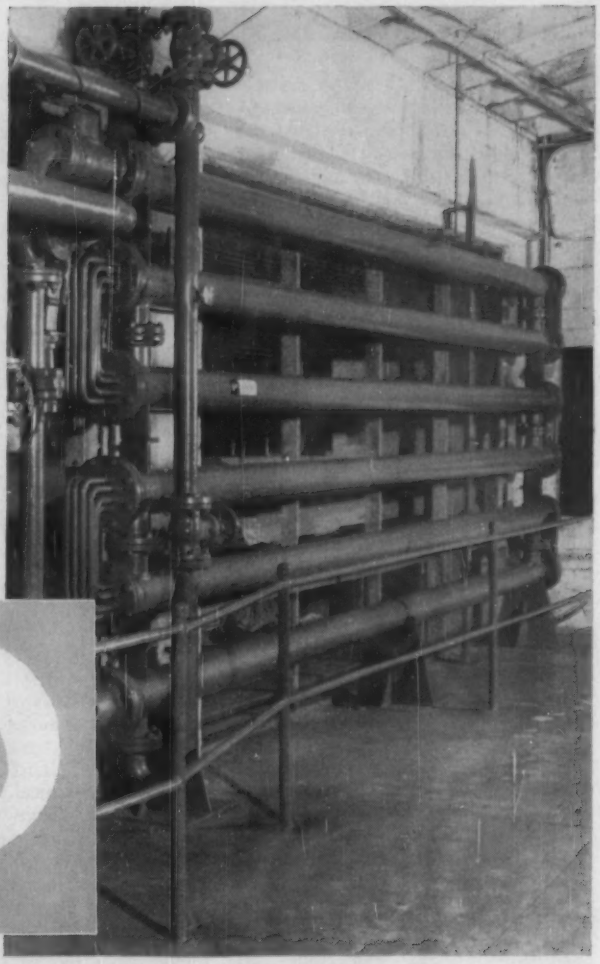
If we use a hard but round nub on our wool roving, can we run our spools closer to the barrel to give less waste?

This is possible. Barrels of jack spools are too small. If they were larger, there would be less waste. Cheeses on the spool are too close together. A little space between them would prevent picking and reduce ends down.

Does a harder nub prevent fly waste?

There is no significant difference between hard and soft nubs as far as fly waste is concerned.

When your boiler's overloaded . . . a Bready System of Waste Heat Recovery is your ace in the hole



RELIEVING excess boiler loads is only one of many jobs that Bready Systems of Heat Recovery from waste water are being called on to do. When a plant is faced with boiler difficulties, installing a Bready System is like having an "ace in the hole" that pays off by giving the plant the necessary capacity of a new boiler but without its increased fuel requirements, and at much less capital investment. At the same time, the Bready System will reduce the amount of fuel required by the present boiler.

Above and beyond these advantages, a Bready System balances the hot water system by normalizing flow rates. High volume hot water is also uniformly supplied at specific temperatures and fill time is greatly reduced. Maintenance is at a minimum—cleaning of the system is automatic!

Get all the facts on a Bready System as it applies to your plant. Write, wire or phone for complete details, or a free plant survey.

Ludell *Manufacturing Company*

5200 WEST STATE STREET • DEPT. TW • MILWAUKEE 8, WISCONSIN

MANUFACTURERS OF BREADY SYSTEMS OF WASTE HEAT RECOVERY

← For more data, write this page number on Reader-Service card.

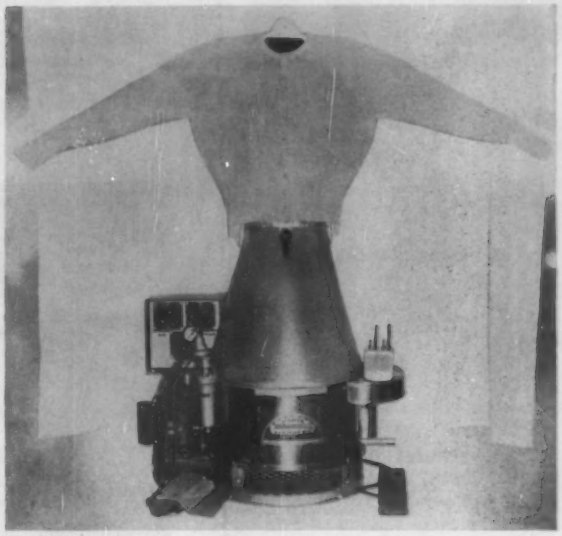
EQUIPMENT and SUPPLY NEWS

Sweater-Finishing Machine

An automatic finishing machine that will handle full-fashioned or cut-and-sewn sweaters has been put in production by Garment Finishing Equipment Corp., 18 Brattle St., Cambridge 38, Mass.

The machine will handle the full range of sweater sizes with only a single manual adjustment. The finishing and shaping of the sweaters is done through an automatic steaming and drying cycle. Compressed air expands the form and molds the sweater to the desired shape; then the sweater is steamed and finally finished by hot air.

The machine will handle pullovers, cardigans, and long- or short-sleeved sweaters. The finishing cycle requires 12 to 30 secs., depending on the fabric.



Circle T-1 on Reader-Service Card

Clutch-Brake Loom Motor

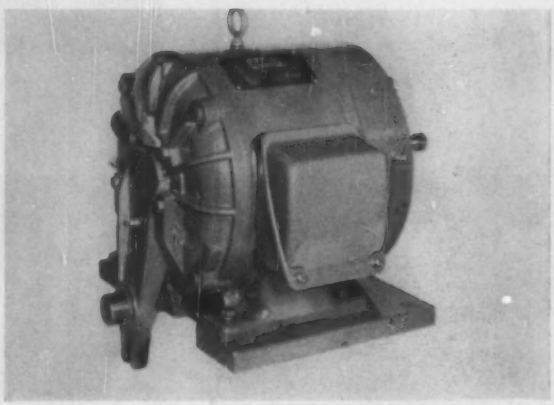
A clutch-brake motor for Draper looms has been announced by Westinghouse Electric Corp., Buffalo Plant, Buffalo, N. Y. The motor is an integrated unit of simple design containing a high-inertia rotor and a clutch and brake to provide a compact power package.

The simplified-design squirrel-cage motor is the same type commonly used on textile machines, with a rotor revolving inside the stator. Therefore there's no new complicated maintenance problem for mill electricians.

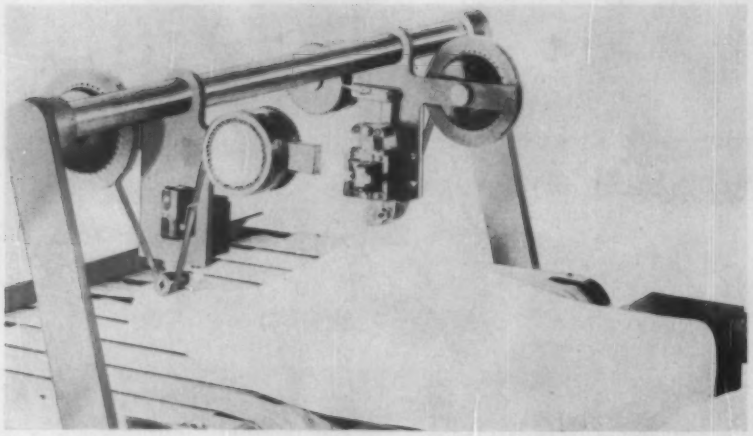
Additional features are: (1) extra-sturdy clutch-and-brake disk, (2) oversized heavy-duty bearings to withstand the shock of loom motions, and (3) fortified insulation.

Cork friction rings are bonded on both sides of the sturdy clutch plate. The clutch brake can be shifted easily for fast stops by the brake-lever arm to the cast-iron braking surface on the bracket.

For the fast starts required, the disk engages the heavy-duty flywheel connected to the rotor.



Circle T-2 on Reader-Service Card



Circle T-3 on Reader-Service Card

Automatic Feeder

Textile articles may be removed one at a time from piles of 1,400 to 1,600 items and positioned exactly on conveyors by a machine developed by Sjöström Machine Co., Boca Raton, Fla. A pickup head faced with adhesive tape is used to pick up the articles and move them to the new position. A solenoid switch then actuates a push-off plate that drops the article in place.

The adhesive tape is fed under tension to the pickup head and is rewound on a take-up spool. As each cycle is completed, the tape advances ¼ in. to present a new surface for the next article.

The pile of napkins, towels, or other items is raised automatically after a unit has been removed.

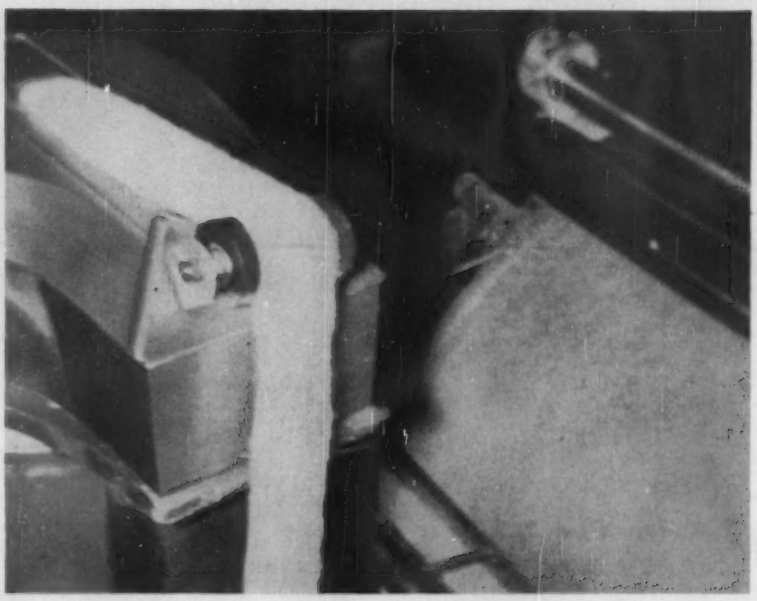
Coiler-Head Guide Roll

A plastic guide roll that can be attached to card-coiler heads has been announced by Engineered Plastics, Inc., Gibsonville, N. C.

The roll keeps the sliver from dragging over the metal surface of the coiler head and reduces broken or snagged fibers. The attachment, which handles both cotton and synthetic fibers, improves quality by keeping tension more even.

Equipped with an aluminum bracket and two low-torque bearings, the unit is easily installed by drilling one hole in the coiler head.

Circle T-4 on Reader-Service Card



Circle T-5 on Reader-Service Card

Magnetic Clip Remover

Clips placed in cloth selvages to remove double edges are pulled from the selvage by double magnets in an accessory developed by Guider, Roll and Service Co., P. O. Box 3747, Peninsula Station, Daytona Beach, Fla.

In operation, the folded end of the clip is caught by the top pole of the magnet; and as the cloth travels downward, the open end of the clip is pulled free from the cloth by the bottom pole of the magnet.

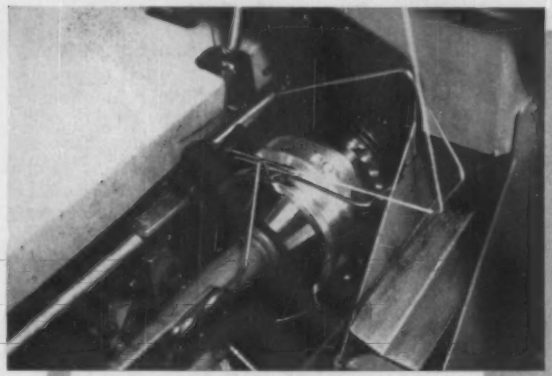
For insurance, a second magnet may be installed on each side to catch clips that are difficult to remove.

The clip remover is mounted just below the cloth guiders and is recommended for any dyeing or finishing process where machine damage from clips is likely.

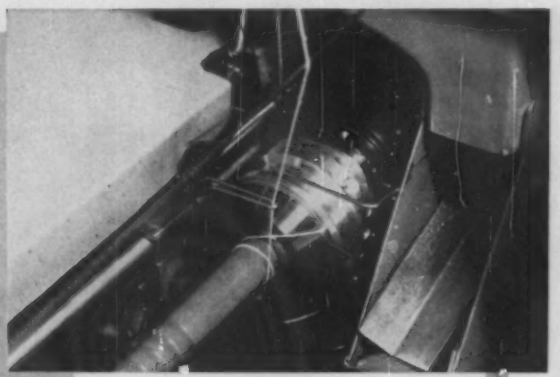
FOSTER-MUSCHAMP MODEL 66* AUTOMATIC FILLING WINDER

A New High in Winding Quality • A New Low in Winding Costs

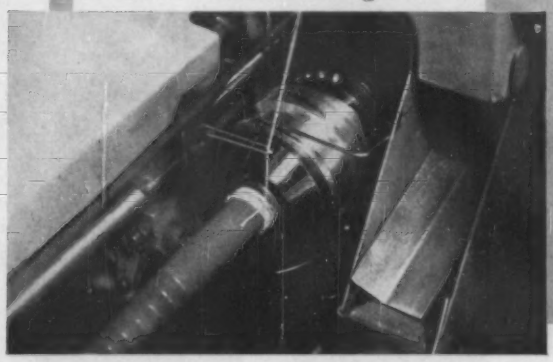
*Manufactured in Westfield, Mass.



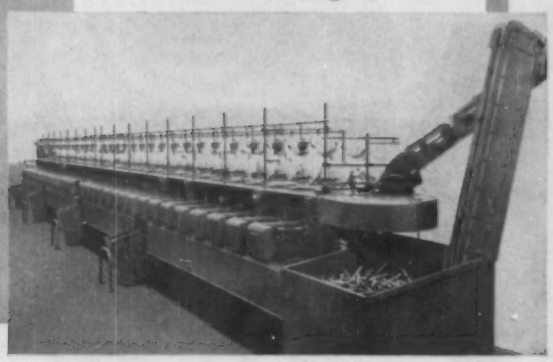
No. 1 — Bobbin entering drive



No. 2 — Commencing the wind



No. 3 — Tail released and secured under first wraps of bunch



No. 4 — Typical installation

NO STARTING TAIL — *A New Feature*

The Foster-Muschamp Model 66 completely eliminates the starting tail on bobbins (see illustrations). Therefore it eliminates the weaving troubles which are caused by starting tails.

This is only one of many features which have enabled the Model 66 not only to set a new high in winding quality, but also a new low in winding costs (as low as ¼¢ per lb. in some cases). Some of the other features are as follows:

- Uniformly perfect bobbins as to wind and density.
- A spindle speed of 15,000 r.p.m.
- Everything is automatic (including pinboarding or stacking of filling boxes and lint cleaning), except piecing up of broken ends and donning and doffing magazine cone creel.

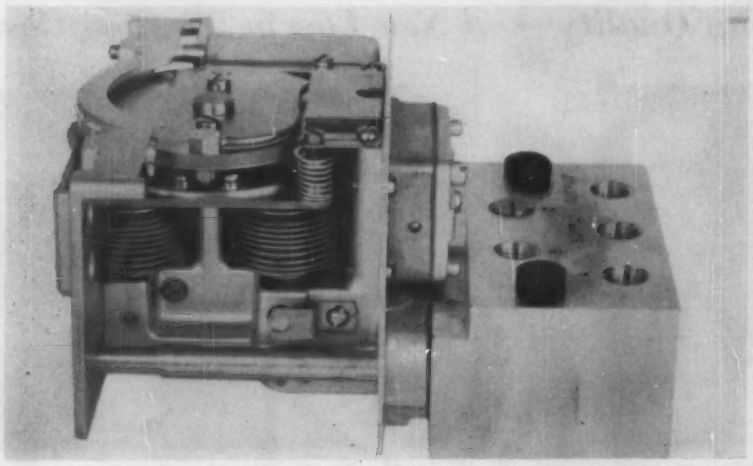
Find out how the Model 66 can increase your quality and lower your costs. Send for our new Bulletin M-4A. No obligations.

FOSTER MACHINE COMPANY

Westfield, Mass., U.S.A. • *Southern Office* — Johnston Bldg., Charlotte, N. C.

Canadian Representative — Ross Whitehead & Co., Ltd., 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ontario

For more data, write this page number on Reader-Service card. →



Pneumatic Computing Relay

A universal pneumatic computing relay that can be adjusted to perform six different arithmetic functions is being manufactured by Foxboro Co., Foxboro, Mass. Six other relays are also available; each is designed for a specific computing problem.

Process applications include fuel-air flow rationing, boiler swell compensation, and flow totalizing on multiple lines.

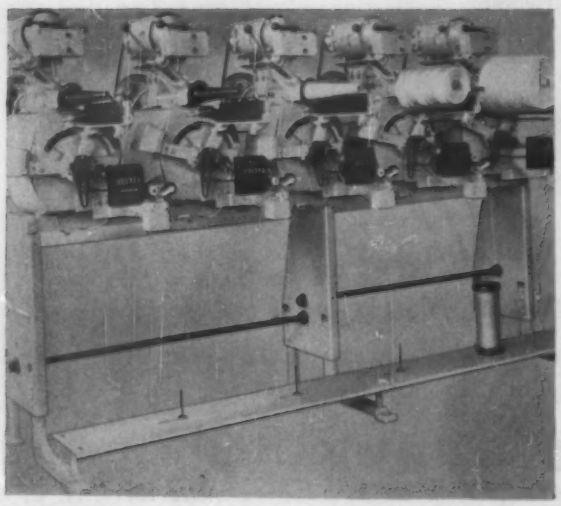
Circle T-6 on Reader-Service Card

Photoelectric Sensing Head

Light beams provide the actuating medium in a sensing head developed by Intercontinental Dynamics Corp., 170 Coolidge Ave., Englewood, N. J.

The unit is mounted so that the edge of the material passes between the light source and a photoelectric cell. Two light beams scan the fabric edge. The tenter or other applicable machine is set so that when one light beam is intercepted, positioning is correct. If the edge moves to cover or uncover both beams, the necessary correction is relayed to the guider mechanism. The sensing heads will actuate the usual hydraulic or electric guider systems or can be adapted to special mechanisms.

Circle T-7 on Reader-Service Card



Circle T-8 on Reader-Service Card

Improved Winder

The Model 78 winder has been redesigned by Foster Machine Co., Westfield, Mass., to make the winder more simple and to reduce maintenance. The machine is a heavy-duty precise-wind machine to wind from 6- to 10-in. traverse and is used for producing tubes or cones of tire cord or coarse cotton, wool, or synthetics in packages up to 35 lbs. and in diameters up to 16 ins.

The machine is built in five-spindle units with a 20-in. clearance between the centers of the spindles. There are no idler pulleys and no long drive belts. The heads may be individually serviced without affecting the operation of the balance of the machine . Expansion-type tube and cone holders for quick doffing with hand control eliminate loose wrenches, spurs, or splines that could injure the tubes or cones.

The control lever has a neutral position to permit free rotation of the package when the operator is tying knots. Electric stop motion and calibrated scale assure accurate and uniform package size. A heavy-duty belt gainer with a convenient handwheel adjusts the wind ratio accurately.

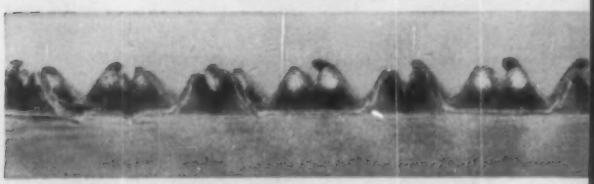
The machine winds overend from bobbins or swifts, reels, or an unrolling device and can be equipped with a torque motor when used as a take-up for yarn being delivered at a constant speed.

IMPROVED TAKE-UP ROLL COVERING REDUCES SECONDS

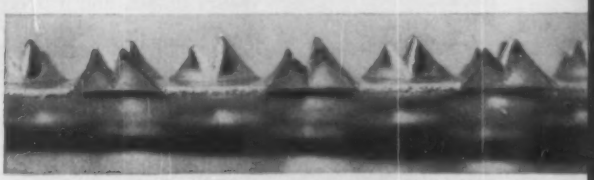
A new manufacturing method perfected by Draper Corporation now makes it possible to produce *a steel fillet covering which has uniform perforations.*

The Draper steel fillet take-up roll covering eliminates "hooks" or irregularities commonly found in fillet coverings. In addition, cloth is held firmly without the danger of cutting or tearing fibers.

This steel fillet is currently available in three grades; *extra-fine, fine* and *medium.*



UNRETOUCHED PHOTO showing "hooks" on old style fillet covering which cut or tear cloth fibers.



ACTUAL PHOTO of new Draper steel fillet covering, illustrating uniformity of perforations which reduce cloth seconds.

DRAPER CORPORATION

HOPEDALE, MASSACHUSETTS

ATLANTA, GA.
GREENSBORO, N. C.
SPARTANBURG, S. C.

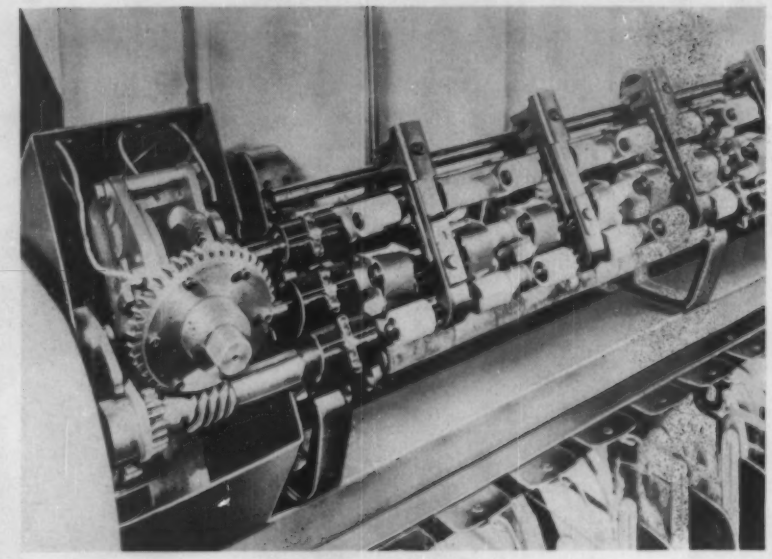
Spinning Change-Over

An improved spinning change-over has been announced by Product Sales, Inc., Whitman, Mass. The change-over is used in conjunction with Clean-Align saddle assemblies.

Individually connected roll sections permit the removal of any roll section without disturbing the remainder of the frame. Realignment of bottom rolls is not necessary because of the flexing-roll coupling. Roll oiling has been eliminated.

Sureweight spring weighting provides positive weight on each roll that can be calculated and measured. Bottom- and top-roll settings and weight-distribution measurements can be easily made.

Head-end draft gearing has ball bearings, and the gears are easy to change. The number of teeth in the draft gear represents direct mechanical draft.



Circle T-9 on Reader-Service Card

Temple for Looms

A temple with the following features has been developed by Drahtex-Ing., Hanke GmbH., Kaldenkirchen/Rheinland, Germany:

1. The temple has two rolls with spiked rings and plastic threads. The back roll can be removed on light fabrics if only one roll is needed. The rolls are supported in bearings at both ends so that they hold even the heaviest fabrics without bending.

2. A cover that's adjustable vertically provides a large window at the top to give an unobstructed view of the cloth on the rolls.

3. A third rotating roll is mounted between the two temple rolls and can be adjusted vertically independent of the cover. This third roll helps hold the cloth and, in addition, permits close control of the cloth as it passes over the other two temple rolls. This roll has a spiked steel ring at the end, which prevents the selvage from running off the needle rings at the foot of the two temple rolls.

The temple can be secured on a round rod and is also supplied with an accessory device for mounting on the loom breastbeam.

Circle T-10 on Reader-Service Card

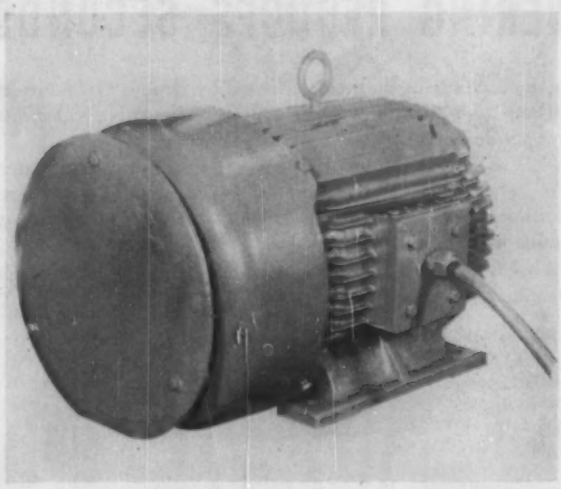
Lint-Free Textile Motors

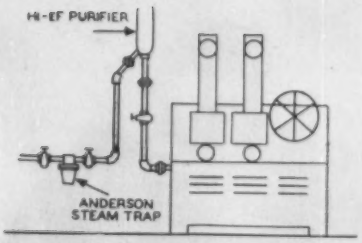
Lint-free textile motors, Life-Line, for constant-speed individual a. c.-driven textile machines are announced by Westinghouse Electric Corp., Buffalo Plant, Buffalo 5, N. Y. The motors are recommended for pickers, roving frames, spinning frames, twister frames, and winders operating in lint-laden atmospheres.

Sizes are 1 to 30 hp. in totally enclosed fan-cooled housings; voltage is 220, 440, 550; phase is 2 or 3; and frequency is 60 or 50 cycles.

Advantages of the motor are: (1) complete protection from lint and moisture to all internal parts; (2) all new NEMA standard-mounting dimensions, can be interchanged with conventional textile motors by using adapter plates; (3) completely self-cleaning, there are no small passages to clog, and smooth surfaces permit free passage of lint as it is blown over brackets and frames; and (4) completely safe, pie plate allows free access of air but prevents hands from touching fan.

Circle T-11 on Reader-Service Card





Size Box

Purifier for Slasher Size

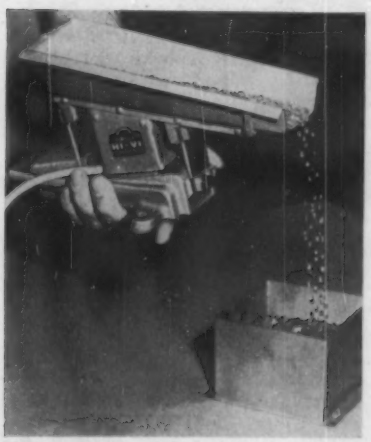
A purifier designed to remove all moisture and condensate from steam lines leading to slasher size boxes is being manufactured by V. D. Anderson Co., 1935 W. 96th St., Cleveland 2, Ohio.

The purifier prevents dilution of size in the box. It's easily installed in a pipeline and is installed like a pipe fitting.

The instrument has no moving parts or filters but removes the condensate by centrifugal force through a series of valves and baffles. The condensate is ejected through a drain and is dripped through a steam trap.

In most installations, the purifier is installed ahead of the pressure-reducing valve at the size box. This arrangement also protects the valve from foreign matter.

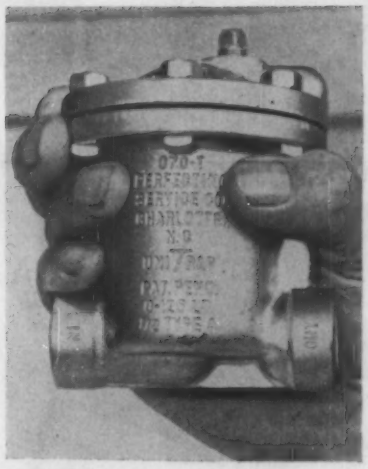
Circle T-12 on Reader-Service Card



Small Chemical Feeder

A vibratory feeder that will accurately deliver up to 500 lbs. per hr. of dry chemicals has been announced by Eriez Mfg. Co., Erie 6, Pa. The machine can be set to deliver chemicals at any desired rate. This model is 10¾ ins. long, 5 ins. wide, and 6⅛ ins. high and is driven directly off any 115-v. a. c. line.

Circle T-13 on Reader-Service Card



Improved Steam Trap

A small lightweight bucket-type steam trap for unit heaters and small processing machines is available from Perfecting Service Co., 332 Atando Ave., Charlotte 6, N. C. A trap size is made for pipes of ¼ through 2 ins. in diameter.

Its extra-large orifice achieves discharge capacities at 250 psi. ranging from 3,500 lbs., per hr. in the ¼-in. size to 55,000 lbs. per hr. in 1¼- to 2-in. sizes.

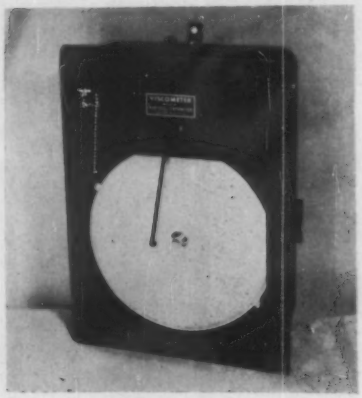
Advantages of the trap are: (1) it is completely universal in pressure application, (2) warm-up is faster, (3) there's little wear, (4) maintenance is low, and (5) more condensate is handled per hour without steam loss.

Circle T-14 on Reader-Service Card

CORRECTION

On page 173 of our November issue, the photo of the head-end gearing of Roberts Co.'s new narrow spinning frame was printed upside down.

The photo is shown correctly at the right.



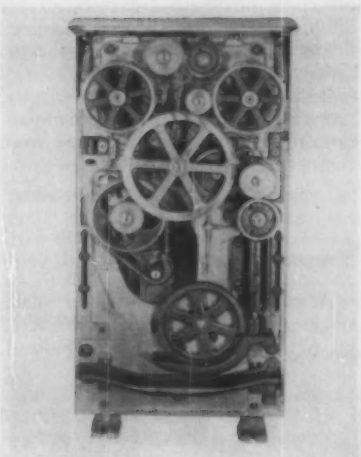
Viscometer Recorders

A line of viscometer recorders suitable for slasher size has been announced by Norcross Corp., 247 Newtonville Ave., Newton 58, Mass. Model R30 is for recording only.

Models R31, R32, and R33 contain one, two, or three adjustable switch points respectively. The last three units will take care of all electric on-off two-positions and three-positions control, operating motors, motor starters, or solenoid valves. These models can also be used for alarms and signals.

Another series of recorders provides a 3- to 15-lb. output air pressure, which is a function of viscosity. One of these models, R3P, can be used with other pneumatic equipment to provide automatic control.

Circle T-15 on Reader-Service Card



Fabric-Winding Control

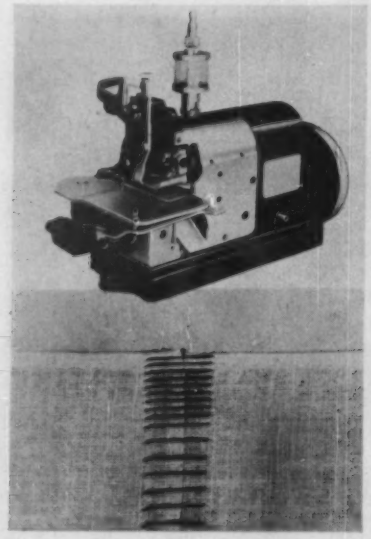
A low-cost control for winding and feeding textile fabrics and textile webs has been announced by Jordan Co., Inc., 3235 W. Hampton Ave., Milwaukee 9, Wis. The instrument provides automatic tension and velocity control for let-off or wind-up operations.

Tension of a few ounces up to several hundred pounds is controlled, and constant velocity control up to several hundred feet per minute is possibile.

The control can be adapted to new machines or machines already in production. It may be mounted on the frame of the machine or held in a stand on the floor.

Two types of controls are available: (1) the limit-switch type provides on-off control for drive motors or for pilot motor control of variable-speed drives, and (2) the proportional type, shown in the picture, provides control for variable-speed drives with the speed-up or slow-down signal proportional to pivot-arm movement from the neutral position.

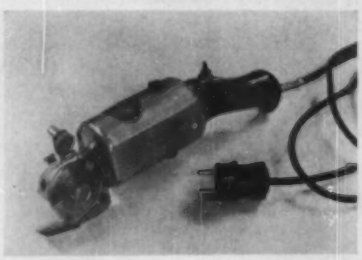
Circle T-16 on Reader-Service Card



Butt-Seam Sewing Machine

The style 60-Y3B sewing machine produced by Merrow Machine Co., 28 Laurel St., Hartford, Conn., automatically sews more threads per inch at selvage areas to give a stronger seam that has less tendency to curl back at the selvage. The $\frac{3}{8}$-in. butt seam is made from a single thread and can be removed easily.

Circle T-18 on Reader-Service Card

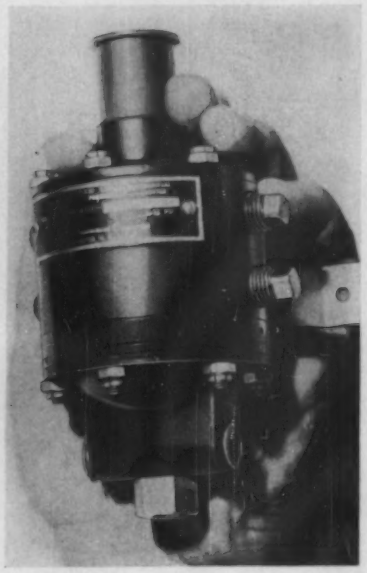


Small Cutter

A fabric-cutting machine that weighs only 28 oz. has been marketed by E. Hoogland, Bonn, Germany.

The circular knife is turned by a powerful electric motor, and the machine carries its own blade-sharpening attachment.

Circle T-20 on Reader-Service Card



Control for Liquid Level

An instrument to control liquid level and consistency has been introduced by Taylor Instrument Cos., 95 Ames St., Rochester 1, N. Y. In addition, the instrument controls steam, water, and air in production consumption.

It measures 6½x3 ins., weighs only 4½ lbs., and can be mounted to pipes with ¼-in. connections. Maximum working pressure is 150 psi., and maximum temperature is 150° F.

Calibration accuracy is better than 1%; sensitivity exceeds 0.1%; and water ranges are 0 to 50, 100, 200, and 300 ins.

Circle T-19 on Reader-Service Card

Multicolumn Demineralizer

An automatic demineralizer that produces an effluent free of CO_2 and silica is being marketed by Penfield Mfg. Co., 19 High School Ave., Meriden, Conn. Four columns are used to provide a two-stage effect as the water passes alternately through an anionic and a cationic resin bed in each pair of columns. When the unit requires regeneration, effluent flow stops and the operator is signaled. Regeneration is automatic after the start-up, and the demineralizer returns to service without further attention.

Circle T-21 on Reader-Service Card

Singeing Range

A combination flame- and plate-singeing machine has been marketed by Ernest Turner & Co. (Salford) Ltd., 3 W. Burton St., Salford, England.

High-speed operation is attained by guiding the fabric so that pockets are formed in which combustion takes place.

The range includes a brushing unit, open-flame singer, plate singer, a steam box, and a quench box. Gas or petroleum may be used as the heat source at the customer's option.

Circle T-17 on Reader-Service Card

CONTINUED ON PAGE 188

Using Salt Efficiently

by **INTERNATIONAL SALT COMPANY, INC.**—America's largest producer of salt

How to Find the Strength of Salt Brines—Accurately

In most of today's plants, the type of hydrometer called a Salometer can generally be used to measure the strength of salt brines most accurately. This device (similar in principle to the hydrometer which checks the condition of your car's battery) is convenient to use—and its scale permits fast calculations for a variety of plant needs. The Salometer scale reads from 0° in pure water to 100° in saturated brine, with each degree representing a percentage of fully saturated brine.

Using the Salometer with maximum accuracy, however, isn't just a matter of reading the scale. A number of simple precautions must also be taken to make sure the Salometer records correct brine strength. Here they are:

1. Check the temperature of the brine. Since most Salometers are calibrated for reading at 60° F., brine temperature should be kept at this level during testing. When other brine temperatures are encountered, it is necessary to use the following table of simple correction factors. These will help provide a completely accurate measurement of brine strength.

APPROXIMATE CORRECTION IN SALOMETER DEGREES

Observed Salometer reading	Subtract per degree below 60° F.	Add per degree above 60° F.
0 to 10	0.049	0.060
11 to 20	0.064	0.082
21 to 30	0.077	0.094
31 to 40	0.087	0.103
41 to 50	0.095	0.112
51 to 60	0.102	0.118
61 to 70	0.107	0.123
71 to 80	0.112	0.128
81 to 90	0.116	0.131
91 to 100	0.120	0.134

For measuring cold brines, such as those used in meat-packing plants, special 38° F. Salometers may be used. Special temperature-correction factors are available when using this type of Salometer to test brines above or below 38° F.

2. Brine should be tested only in a straight-walled cylinder made of clear glass—set on a level surface. Any moisture that collects on the outside of the cylinder should be wiped off before testing procedures start.

3. Salometer stem must be thoroughly dry, clean, and free from grease or caked salt crystals. Also, the Salometer should not touch the sides of the cylinder when readings are taken. It should be read with the stem in a vertical position.

4. Check new Salometers by placing them first in clear water; reading should be 0° S. Then empty the cylinder, rinse with a saturated salt solution, and refill with fully saturated brine; reading should be 100° S. Both water and brine should be at 60° F.

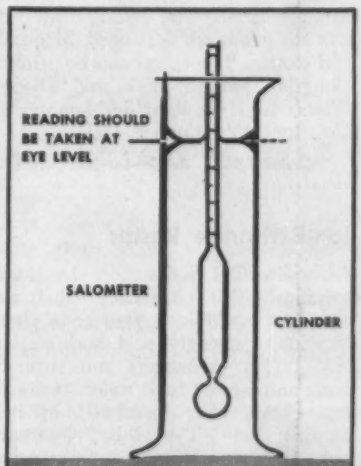


Illustration showing the proper eye level for reading a free-floating Salometer in a straight-walled glass cylinder.

5. Correct reading technique. Brine tends to rise along the sides of a glass cylinder, forming a concave surface known as a meniscus. For correct reading, the eye should be brought to a point level with the *bottom* of this meniscus. Errors of two or three degrees are possible if reading is taken at the point where the brine has risen along the sides of the cylinder.

Special Salometers. In the canning industry, where brine is used for quality grading, a different type of Salometer is often used. It's graduated on a scale where 100° S. represents brine containing 25% salt, instead of the normal 26.395%. Special hydrometers may also be used in the tanning or chemical industries. But the same procedures outlined here must always be followed when brine is to be tested—no matter what type of hydrometer a plant uses.

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International Salt Co., Scranton, Pa.
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Monapolenes . . . a series of softeners and plasticizers for resin finishes available in the following grades: **Monapolene A Concentrate** (anionic), **Monapolene AHC Concentrate** (anionic), **Monapolene AAW Concentrate** (anionic), and **Monapolene N Concentrate** (nonionic). The products are recommended for improving tear strength and abrasion resistance of resin-finished fabrics. Mona Industries, Paterson 4, N. J.

Circle D-1 on Reader-Service Card

Flameproofer

Wica Phosphorylamide. . . . combines with cellulosic materials without the need of catalysts to produce permanent flameproofing effects. The product is applied cold in concentrations of 4 to 20% and dried and cured into the fabric at 290°F. The material is compatible with many other finishing materials. Wica Chemicals, Inc., P. O. Box 506, Charlotte, N. C.

Circle D-2 on Reader-Service Card

Cyclic Urea Resin

Emboset-Z . . . displays low chlorine-retention properties and produces durable crease-resistant finishes on cotton. The product provides good dimensional stability, has little effect on tensile strength, and is compatible with durable water-repellent finishes of the Ranedare type. Metro-Atlantic Chemicals, Inc., Greenville, S. C.

Circle D-3 on Reader-Service Card

Modifying Resin

Monabond . . . designed to add bulk to resin-finished fabrics, the product is also recommended to improve abrasion resistance and increase durability of resin finishes to washing and dry cleaning. Mona Industries, Paterson, N. J.

Circle D-4 on Reader-Service Card

Vat Colors

Vantasol Colors . . . are applied from water-in-oil emulsions to give solid prints on cellulosic fibers. By applying vat colors by this system, more brilliant shades are often obtained and the hand of the fabric is completely satisfactory after a light soaping.

The colors can be applied in conventional equipment and are dried into the goods after printing. The colors are then reduced in a run through caustic and hydro in a pad; and the goods are flash-aged, oxidized, and soaped. The colors can be printed alongside aniline black and Diagen colors. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Circle D-5 on Reader-Service Card

Ion-Exchange Resins

Amberlite CG Series . . . developed specifically for chromatographic analysis are available in four resin classifications: strongly acid and weakly acid cation exchangers and strongly basic and weakly basic anion exchangers. Each class is offered in two particle sizes. Type I has a particle size between 100 and 200 mesh (dry); Type II particle size is 200 mesh (dry). Rohm & Haas, Resinous Productions Div., Washington Square, Philadelphia 5, Pa.

Circle D-6 on Reader-Service Card

Water-Dispersible Pigments

Aquaprint Colors . . . are water-dispersible colors suitable for application in the form of oil-in-water emulsions or as aqueous dispersions. The colors are nontarnishing and are characterized by a sharp mark and smooth blotches. The series of colors can be printed alongside Aridye colors, aniline black, and stabilized azoic colors for effects that would be difficult to produce in any other way. Interchemical Corp., Textile Colors Div., Hawthorne, N. J.

Circle D-7 on Reader-Service Card

Softeners

Richsoft 1434 . . . is an anionic product particularly suited to producing a soft hand on cotton fabrics.

Circle D-8 on Reader-Service Card

Richsoft 1439 . . . is a cationic softener that is useful in producing a dry, soft hand on synthetics, wool, cashmere, and high-bulk yarns.

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Richsoft 1439 . . . is a catonic softener that develops a waxy hand because of the inclusion of lanolin esters in its formulation.

Circle D-10 on Reader-Service Card

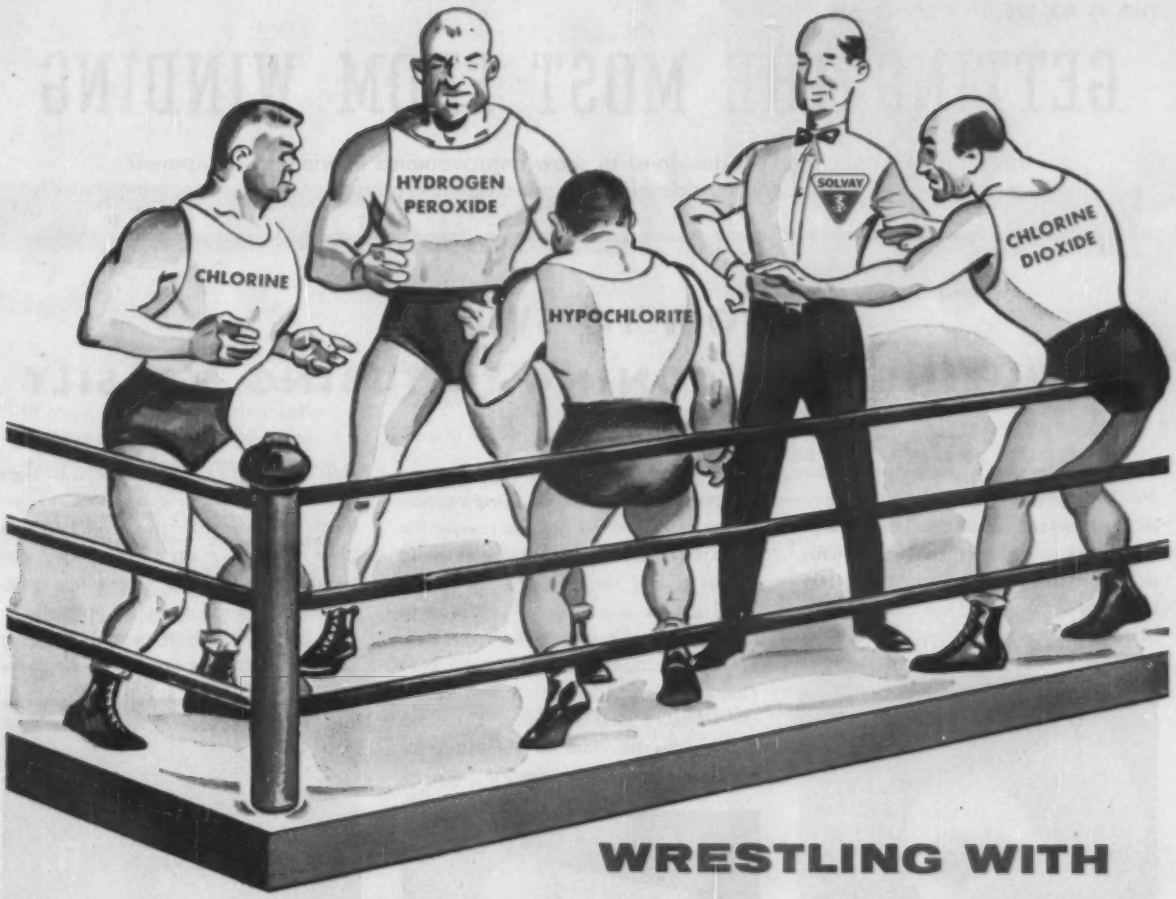
All three softeners show excellent resistance to yellowing at high temperatures.

Richmond Oil, Soap & Chemical Co., 1041-1043 Frankford Ave., Philadelphia 25, Pa.

Cationic Dye

Sevron Orange G . . . produces bright yellowish-orange shades on Orlon that are fast to light and wet processing and are not phototropic. It can be applied over a pH range of 4.0 to 8.0 and is recommended for producing deep shades of red with Sevron Brilliant Red B. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Circle D-11 on Reader-Service Card



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THIS IS NO. 120 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

HOW TO SWITCH FROM PINEAPPLE CONING TO TUBING — EASILY

Many mills that have equipped their No. 50 Precision Winders with the new large diameter Pressure Roll have found that it not only gives them such benefits as greater freedom from stitches, a freer turning roller bail, and less maintenance, but also greater versatility.

Fig. 1

This Pressure Roll assembly can be used to build pineapple cones of fine denier filament synthetic yarn as shown in Figure 1. Or, with slight modification, it can be used to wind taper-end tubes as shown in Figure 2.

The taper-end tube that can be wound with this device is particularly attractive to some mill men who may wish to invert the package when they place it on their knitting machine creel, because of the effect inverting it will have on the final twist in the yarn. By using a taper-end tube, they don't have to reverse the direction of the winding spindle, as would be the case if they were to use a cone.

All a fixer has to do, in addition to changing the spindle itself from one suitable for coning to a tubing spindle, is to change Clamp A, Figure 3, and adjust the Pressure Roll assembly. There are three different clamps: 50-3022-5 for 3°30′ coning, 50-3022-7 for 5°57′ coning,

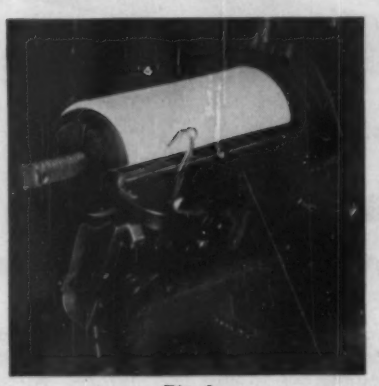

Fig. 2

and 50-3022-6 for tubing. The first two are shaped to conform to the degree of taper of the cone; the latter is shaped to conform to the parallel setting required for a tube.

After a clamp is changed, the Pressure Roll should always be adjusted to align it with the tube or cone. This adjustment is made with the screw "B." A piece of paper or any similarly thin material can be used as a feeler gauge to determine if the roll is aligned properly. If, with the Pressure Roll assembly touching the cone or tube at one point, the paper

Fig. 3

can be passed between the roll and tube at another point along the length of the roll, an adjustment is needed to bring the roll into alignment.

After the pressure roll is adjusted, the upper traverse frame stop should be set so that the roll will contact the high point of the paper cone or tube. In no case should the pressure roll be allowed to come in contact with the bare cone or tube holder.

January 1957 — 23.6.8

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

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QUESTIONS and ANSWERS

Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problem to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Weave Worsteds At 50 to 60% R.H.

Technical Editor:

What temperature and humidity is best for weaving worsted cloth? To what extent do changes in relative humidity affect weaving worsteds? (1284)

A temperature of 75 to 80° F. and relative humidity of 50 to 60% are suitable conditions to weave worsted fabrics. Fine single yarns will weave better when the humidity is high. Plied and heavy yarns require less humidity.

Comfort and health of workers must also be considered. Excessive heat and humidity will also affect weaving efficiency.

Changes in humidity affect weaving in a number of ways. Insufficient moisture causes the fibers in the yarn to become brittle. Static electricity causes the fibers to attract and repel each other and cause a fuzzy appearance in the yarn. This condition makes the warp yarn stick together and causes skips, floats, and warp breakage.

Lack of proper humidity will cause the size on the warp yarn to become powdery and fall off. One of the best methods to determine the proper percentage of relative humidity in a weaving department is to check the weaving efficiency at slightly different degrees of relative humidity for a period of a week in the 50 to 60% range.

Filling storage areas should be kept at 60% r.h.

How To Identify Seamless Hosiery

Technical Editor:

How can we identify seamless hosiery after it has been dyed so that we can tell which machine it was knitted on? (1257)

Mark the welt with tuck stitches on either side of the boarding line. Machines from 1 to 10 can be represented by 1 to 10 tucks close together. Machines from 10 to 20 are represented by one tuck, a space, and 1 to 10 tucks close together. Machines from 20 to 30 are represented by one tuck, a space, one tuck, a space, and 1 to 10 tucks.

Machine 45 is represented by a tuck, a space, a tuck, a space, a tuck, a space, a tuck, a space, and five tucks close together.

Spray Cotton With Oil At the First Opening

Technical Editor:

What are the advantages and disadvantages of spraying oil on cotton at the picker processes? (1255)

The most obvious results from spraying oil on cotton is the cleanliness and dust-free condition of the card room. The only apparent disadvantage is the slight additional cleaning required on the machines where the oil is applied, such as feed aprons on feeders or beater chambers on pickers where the spray-type method is used.

There are advantages in spraying oil on the stock in the first opening process rather than on the picker. The finer dust is more easily removed from the cotton. The oiled stock is more thoroughly mixed with any unoiled stock, and it equalizes the distribution by contact. Less equipment is required, control is easier, and there is no leakage or waste accumulations in the beater chambers.

Comparative waste tests made on oiled stock showed a slight increase in dust and small leaf removed in the feeders and in the lickerin waste on the card. The total amount of card waste was reduced 0.5%. This decrease showed up in fly, strips, and invisible loss. There was no loading of the card cylinder or doffer where the amount of oil applied was kept to 0.3% or less.

Oiled stock showed slightly less clearer waste at drawing and slubbing and less roll lapping on drawing. Drawframe sliver was less affected by static and drying out over week ends. Roving and yarn sizes were heavier but more uniform. There was no apparent effect on end breakage in roving or spinning, yarn strength, or in bleaching, dyeing, or finishing.

Taper of Filling Bobbin Helps Unwinding

Technical Editor:

What should be the taper in a standard filling bobbin? Is the taper merely intended to fit the shape of the spindle or does it facilitate unwinding? (1248)

The taper on standard filling bobbins is there to cause less drag on the yarn as it unwinds over the empty barrel of the bobbin as it is pulled through the shuttle eye. We don't know of any specific standards to cover the degree of taper.

This taper is not so important where the filling is rewound before weaving. Rewinding is becoming more general in mills today because there are fewer filling breaks on the loom.

More Details on Extra Card Cylinders

Technical Editor:

We are experimenting with the extra card cylinder described in TEXTILE WORLD, April, '55, p. 116. Could you give us more details on the diameter and speed of the extra cylinder and what type of clothing was used? (1247)

Two different types of cylinders have been used. The first type was a 3½-in. cylinder with metallic clothing

with 150 points per square inch, and the cylinder was run at 310 and 540 rpm.

The setting between the card cylinder and lickerin was 0.007 in. The gauge between the extra cylinder and the card cylinder was 0.007 in. and 0.012 in. The gauge between the extra cylinder and the lickerin was 0.007 in. The drive was improvised from the lickerin shaft with a crossed belt.

The next cylinder used was 4½-in. dia. and covered with wire fillet of 705 English-type wire. The extra cylinder was run at 360 and 440 rpm. This drive was run with a V-belt from the cylinder shaft, which proved a better drive.

The gauge between the extra cylinder and the card cylinder was 0.034 in. and 0.038 in. The gauge between the extra cylinder and lickerin was 0.007 in. and 0.012 in.

Dean Hugh M. Brown reports that these experiments at Clemson College have been disappointing. The extra cylinder has, so far, not shown any marked improvement in neps and trash removed; but experiments are continuing.

Tips To Stop Twill Curling in Mercerizing

Technical Editor:

We are mercerizing a three-leaf twill, and we have trouble because the material curls at the selvages. What can we do about it? (1244)

Substitute rubber-covered expander rolls for all the top rolls in the pad box, and follow with a power-driven steel scroll roll at the entering end of the tenter. The expander rolls are similar to those used in chainless mercerizers. The steel scroll roll can be made in your shop and can be driven by an auxiliary motor. The surface speed of the roll should be three to four times the yards per minute of the cloth traveling under it.

The roll is made by cutting deep threads in a solid steel bar about 3 ins. in diameter. One side of the thread is left-handed, and the other side is right-handed. The direction of rotation should be so that the threads appear to travel toward the ends of the roll. Cloth should be guided so that the curl of the edges bears against the scroll.

A Simple System For Selecting Cotton

Technical Editor:

What system of bale selection can we use to prevent variations in color and quality of our cotton yarn and cloth? (1256)

Uniform color is desirable in all yarns and is essential in goods delivered in the gray. Dark or light warp stripes and filling bars will result if there is a great variation in the color of successive mixes. Knitted goods clearly show differences in the courses where the color of the yarn varies.

Careful selection, uniform mixing, and proper blending are all essential. The color, grade, and staple of the bales in the cotton inventory will determine the number and nature of the bales in each mix.

One mill uses a simple system based on the color of tags to identify staple length. Yellow is used for 1-in. cotton, green for 1 1/32-in. cotton, and pink for 1 1/16-in. cotton. Grade is indicated by the official grade number on the tag, from No. 1 for Middling Fair to No. 9 for Good Ordinary.

For color identification, letters are used on the tags. *A* is for extra white, *B* for bright, *C* for white, *D* for spotted, *E* for yellow tinged, and *F* for light stained. A yellow tag with 5C marked on it indicates 1-in. Middling white. A pink tag with 4D means 1 1/16-in. Strict Middling spotted.

This system makes bale selection in the cotton house much easier and helps in keeping a good average of cotton quality. Special attention is given to bright cotton. While this cotton is usually classed as white, its increased bloom will affect the color of the mix, and any variation in the number of bales in successive mixes will show in the color of the finished yarn.

How To Test Cotton for Maturity

Technical Editor:

How can we test cotton fibers for maturity? (1249)

Here is the latest ASTM method of testing cotton fibers for maturity:

Make a test specimen of about 200 fibers by gripping the fibers from a sample between a 2x3-in. microscope slide. Pull the fibers as evenly as possible from the entire width of the specimen, and spread the extracted fibers as evenly as possible with a dissecting needle.

Cover the fibers with a cover glass and apply a drop of 18% NaOH solution at one corner of the cover glass while holding it down at the opposite corner. Tap the cover gently to remove air bubbles and excess solution. Apply another drop or two of the solution to wet the fibers if necessary.

Remove the excess solution at the edge with absorbent tissues or blotting paper. Place the mounted fibers on the mechanical stage of a microscope.

Check the fibers for maturity at about ¼ in. from the end that was held down during extraction. Bring the fibers successively into view by moving the stage and examine them at 400 to 500X magnification.

Classify all the fibers in each specimen with respect to the thickness of the fiber wall. Mature fibers are those having a wall thickness greater than half the diameter of the lumen.

The percentage of mature fibers in each specimen is the ratio of the mature fibers to the total number of fibers multiplied by 100. The average of six test-specimen results is calculated to the nearest 1%.

Humanics — **A TW Brief**

Three Important Human Needs

To be satisfied with his job, and thereby being enabled to produce quality work in quantity, an employee has three basic needs.

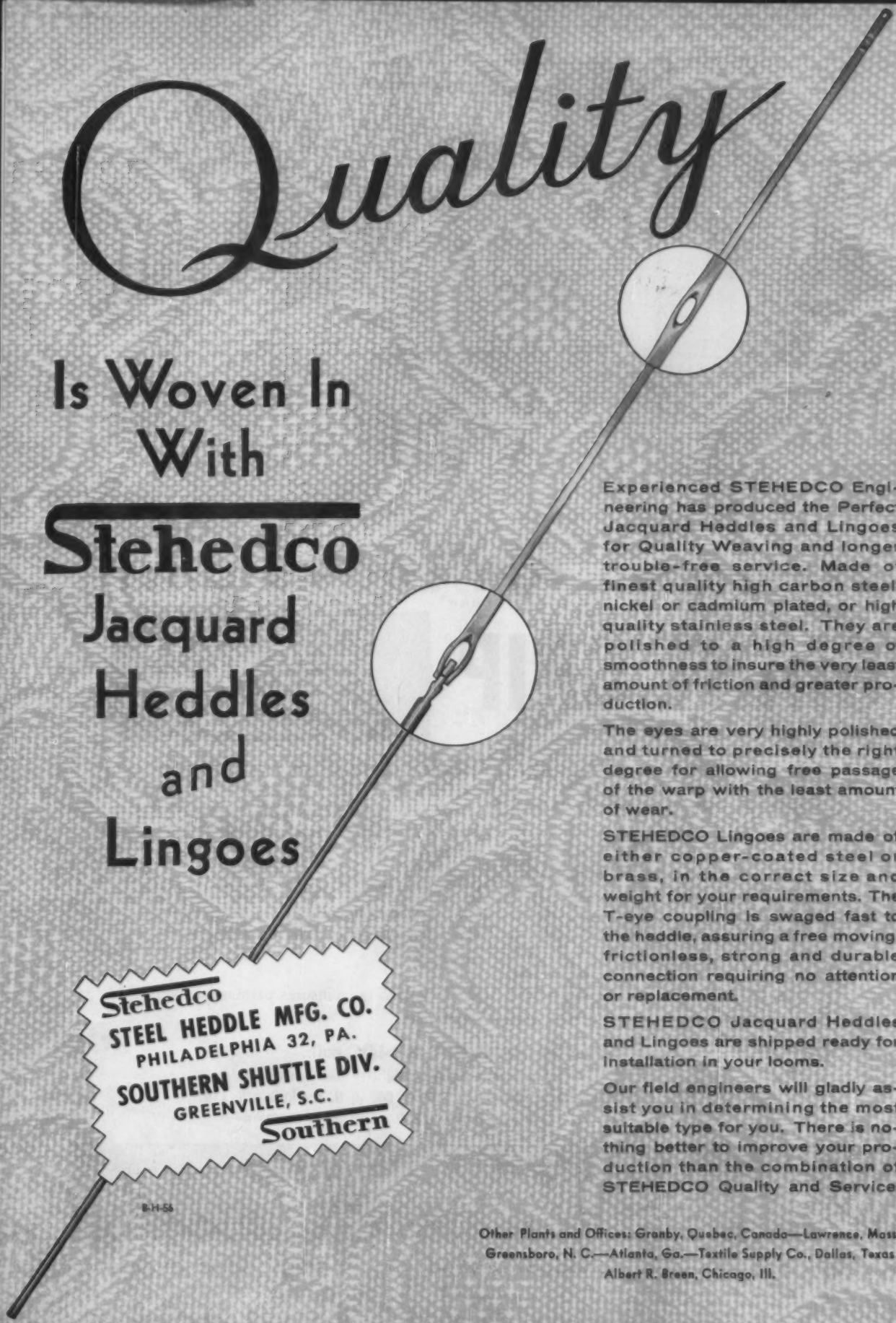
The first of these needs is dignity, self-respect of the individual, and the opportunity to gain personal recognition.

The second need is that of belonging, of being a member of the team, and a feeling of mutual respect and friendliness for his co-workers.

Third, there is the need of a feeling of security. Of course, no company can guarantee all its employees continued employment. On the other hand, a supervisor should not instill a feeling of job insecurity and hold it like a club over the employee's head.

Quality

Is Woven In With Stehedco Jacquard Heddles and Lingoes



Experienced STEHEDCO Engineering has produced the Perfect Jacquard Heddles and Lingoes for Quality Weaving and longer trouble-free service. Made of finest quality high carbon steel, nickel or cadmium plated, or high quality stainless steel. They are polished to a high degree of smoothness to insure the very least amount of friction and greater production.

The eyes are very highly polished and turned to precisely the right degree for allowing free passage of the warp with the least amount of wear.

STEHEDCO Lingoes are made of either copper-coated steel or brass, in the correct size and weight for your requirements. The T-eye coupling is swaged fast to the heddle, assuring a free moving, frictionless, strong and durable connection requiring no attention or replacement.

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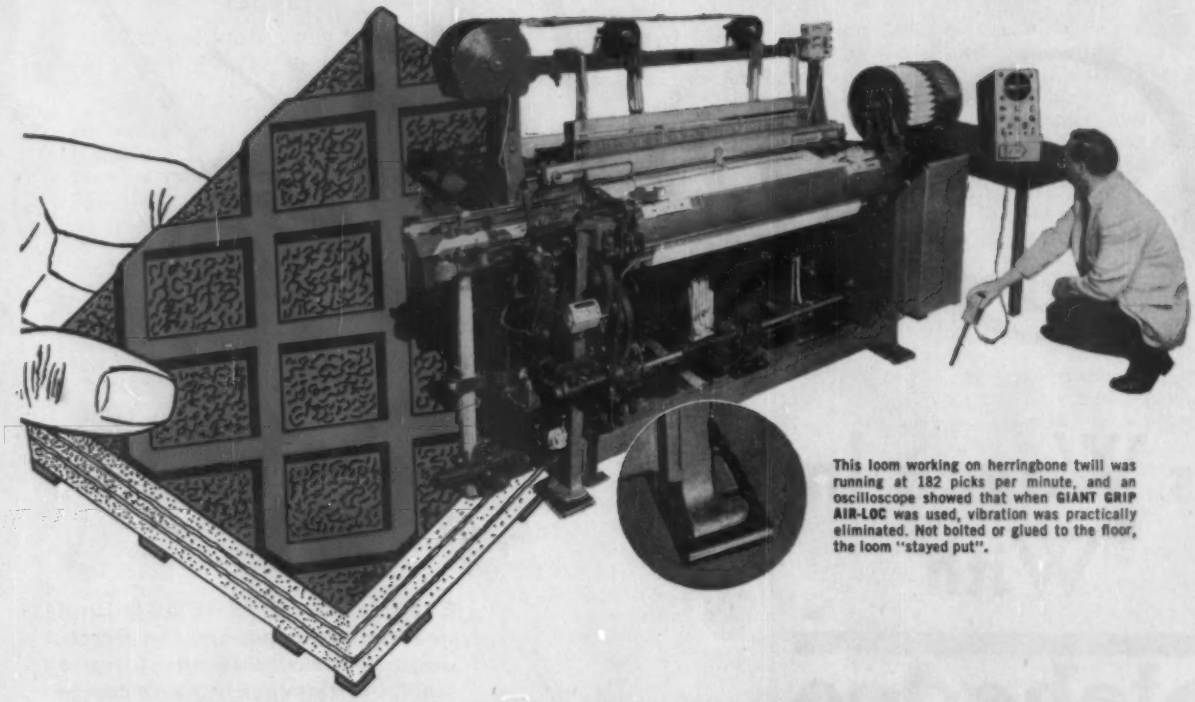

This loom working on herringbone twill was running at 182 picks per minute, and an oscilloscope showed that when **GIANT GRIP AIR-LOC** was used, vibration was practically eliminated. Not bolted or glued to the floor, the loom "stayed put".

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6. *Self-leveling* . . . insures permanent loom alignment.

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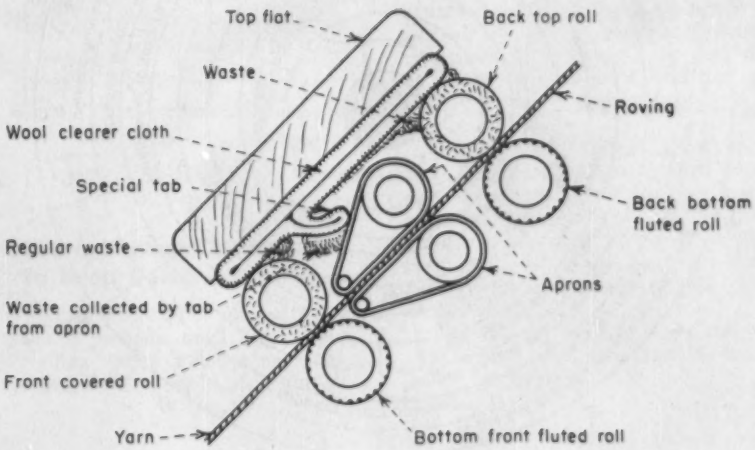
KINKS and SHORT-CUTS

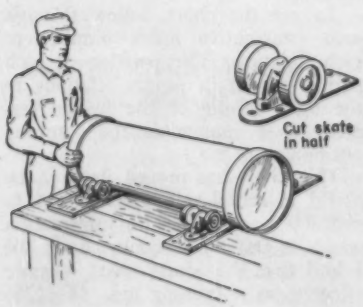


Tuck Makes Top Clearer Work More Efficiently

We used to have trouble keeping our spinning-frame aprons clean and free from oil. None of the top clearers used seemed to do the job right.

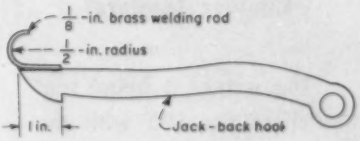
I cut a clearer cover 1 in. longer than normal and put a ½-in. tuck in it. This tuck, or tab as we call it, is placed so that it lies against the apron as illustrated.

The tab keeps lint from falling between the two aprons and feeding out with the roving. The aprons remain clean and free from oil, and cleaning time is reduced. Another advantage is that the tab, being flexible, lies against the apron at all times regardless of the roller size. (K-3273) *A. J. Redmond, Gastonia, N. C.*



Make This Turning Jig From Old Roller Skates

A very handy jig for turning large cylindrical objects for welding or riveting can be made from an old pair of roller skates. The skates are cut in half and attached to pieces of hardwood. The rollers are then placed on a table and spaced to fit various sizes of objects. (K-3051) *Chas. H. Willey, Concord, N. H.*



Welded Hooks Indicate Box-Loom Shuttle Changes

On Crompton & Knowles looms with two, three, and four shuttle boxes, box-motion changes are indicated by the jack-back hooks at the back of the dobby.

When a weaver is turning the handwheel on the cylinder shaft to set the pattern chain at a pick-out, a hook often gets under the dobby knife and dobby parts are broken.

In addition, the weaver sometimes resets the hook by hand when he pulls out only one broken pick. At this time, oil and grease on the hook get the weaver's hands dirty, and the cloth is soiled.

At our mill, we've arranged the hooks so that the dobby isn't damaged and the weavers' hands aren't soiled.

We weld a small hook to the top jack-back hooks used to indicate box-motion changes. By using the hook, the weaver needs to use only one finger to raise or lower a jack back.

The old method required the use of one hand to lift the dobby hook while the other hand was used to lower or raise the jack back.

The hook is made from a 2½-in. length of ⅛-in. brass welding rod. One end of the rod is bent for 1½ ins. into a half circle of ½-in. radius. The other 1 in. is welded to the end of the dobby hook as shown in the sketch.

Now breakage is reduced, cloth is cleaner, and production is increased. (K-3198)

November Prizewinning Kink

The best Kink published in the November issue of TEXTILE WORLD, according to our reader-judges, was:

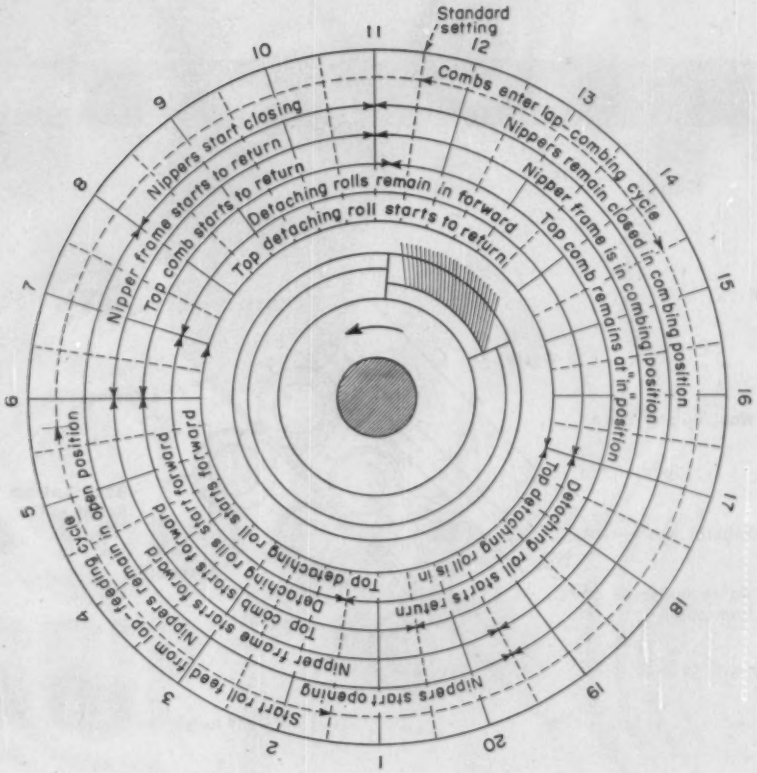
"Timing Chart Aids in Training Comber Tenders"

The winner is being sent a check for $25 with the compliments of TEXTILE WORLD.

The prizewinning Kink is reprinted at the right.

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 300 mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answers in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.


Standard setting
Combs enter lap-combing cycle
Nippers remain closed in combing position
Nipper frame is in combing position
Top comb remains at "in" position
Detaching roll starts return
Top detaching roll is in
Nippers start opening
Nipper frame starts forward
Top comb starts forward
Detaching rolls start forward
Top detaching roll starts forward
Start roll feed from lap-feeding cycle open position
Nippers frame in open position
Nippers start closing
Nipper frame starts to return
Top comb starts to return
Detaching rolls remain in forward
Top detaching roll starts to return

Timing Chart Aids in Training Comber Tenders

A handy chart to demonstrate the proper timing of the principal operating parts of a comber can be made from a heavy piece of cardboard, as illustrated. The cardboard should be shellacked to preserve it after the timings are recorded.

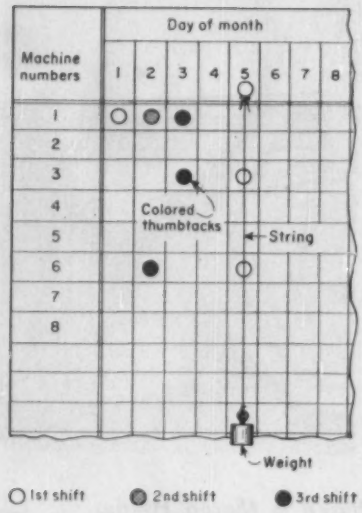
The beginning and ending point of each part of the comber is timed and written on the chart in proper sequence. The figures shown here are for one make of modern comber, but the chart can be adapted to any comber.

In this instance, the forward row of needles is set with a standard gauge to the boss of the back detaching roll, with the index set at 11½ on the pointer.

The outer circle of the chart shows that the feeding cycle of the comber should start with the index reading at 1½ and end at 5¾. The next circle shows that the nippers are open to receive the lap. The third circle indicates that the nipper frame is in correct position. The fourth, fifth, and sixth circles show respectively the correct timing and operations of the top comb, detaching rolls, and top-roll motion.

To use the chart, follow through each consecutive index number to each function. The position of each part is shown in proper relations to the basic timing of the needle segment as it approaches the combing position.

This chart has proved itself to be useful in actual mill practice and in instruction classes. The information could be put on a square chart, but I find that the round chart is more effective as a training aid. (K-3128)



Use a Control Chart To Keep Defects Down

Quality control in our knitting room was a problem until we installed a grading system and put up a control chart. Here's how to make the chart:

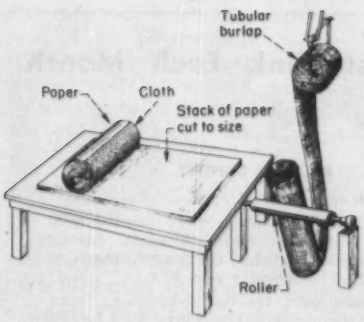
Take a framed piece of 18x24-in. cork or soft wood, and paint squares over its face. Mark your machine numbers down the left side of the chart and the days of the month across the top of the chart.

Use colored thumb tacks to denote machines producing below-standard fabrics. Different colors identify different knitters, fixers, or shifts. A marker made from colored string with a weight on the end shows the last day marked on the chart.

You will have to determine the accepted standards for your fabrics. We pass all our cloth through an inspecting machine and report the number of defects in each piece, and the report is passed to the overseer at the end of each day.

Our standard is four defects per piece. If there are more than four defects per piece, the overseer puts a pin on the board opposite the machine that produced the fabric. He can then rapidly spot the machines that produce faulty fabrics and take corrective action.

The pins are removed at the end of each month, and the chart is used again. (K-2968)



Use This Quick Method To Wrap Rolls of Cloth

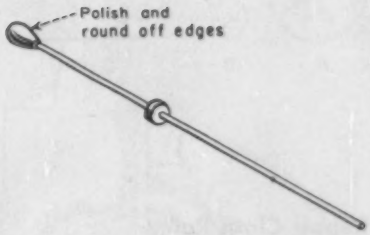
We do not bale our cloth but ship it in rolls about 1,500 yds. long. Each roll is wrapped in paper and then covered with burlap.

Formerly, the operator lifted the roll, wrapped paper around it, cut a piece of burlap longer than the roll, and slipped the tubular burlap over the roll. He then fastened each end of the burlap with wire and cut off the excess. About 8 ins. of burlap per roll was wasted.

We practically doubled the output of the job, eliminated the waste of burlap, and made the job easier by using a simple table and roller arrangement. The paper is all cut to length and placed on the table. Rolling the cloth across the table wraps it in the paper.

The roll of circular-woven burlap is kept in an overhead hanger. When the roll of cloth is pulled off the table onto the roller, it is lowered on one end and the burlap is slipped over the roll of cloth as it moves downward. The end of burlap is fastened, and the roll of cloth is swung around the other way across the roller. The second end is fastened, and the burlap is cut to size.

A 67-year-old man packages 120 rolls in 8 hrs., compared with 63 rolls produced by a younger man using the old method. (K-3137) *G.M., Quebec, Canada*



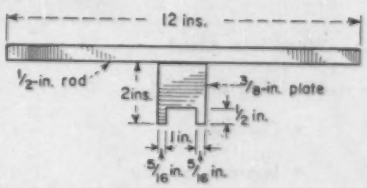
Use Rouge Cloth To Polish Feeler Tips

When we weave fine-denier yarn, we often have trouble with broken filaments in the filling caused by rough feeler tips on Crompton & Knowles S-6 looms. To prevent the broken filaments, we keep the feeler tips smooth.

We inspect all feeler tips with a pick glass. The feelers on the looms are checked carefully for rough tips. We also inspect the tips on all new feelers before they're put on a loom.

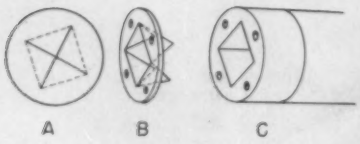
To polish rough feeler tips, we use a rouge-cloth wheel mounted on the shaft of a ¼-hp. motor. The rouge cloth polishes the tips smooth without wearing them excessively.

Now we have better cloth and fewer loom stops because the feeler tips do not cut, bruise, or chafe the tender filling yarn. (K-3156) *Charles R. Batzer, Lancaster, Pa.*



Turn Spooler-Drum Nuts With This Wrench

If you are having trouble turning the nuts on the drum shaft of your Barber-Colman automatic spooler, try making a special wrench, as illustrated, and your troubles will soon be over. Two old handles from Tennant floor mops slipped over each end of the bar will make the work even easier. (K-3078)



Repair Cloth Rolls With a Metal Plate

The square hole in the end of a cloth roll often wears to such an extent that it does not fit the stud, but the roll need not be discarded. The roll can be repaired and made as good as new with a sheet-metal plate.

To make the repair, cut a circle the same diameter as the roll from heavy-gauge sheet metal. Locate the center and mark off a square the exact size needed to fit the take-up stud.

Mark lines from corner to corner of the square, as at *A*. Cut along the lines with a sharp chisel, fold the flaps in on the dotted lines, and drill four holes in the plate, as at *B*. Then insert the sharp points of the plate in the square hole of the roll, as at *C*, and fasten the plate with nails or screws. File off all rough edges, and the roll is as good as new. (K-3026)

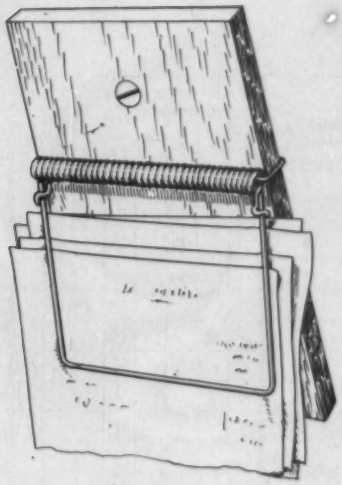
H.E.W., Berwick, Pa.

Clean Cotton Bales With Old Beater Lags

Our mill makes high-grade combed yarn, and we can't afford to let any tar or foreign matter from dirty bale coverings get in the work. Sometimes the ends of cotton bales are almost black from standing in dirty box cars or warehouses.

We made a "brush" from a piece of an old Kirschner beater by attaching a handle to the wooden backing. The gadget looks like an old-fashioned hand card and functions much in the same manner. The sharp lags skim off the dirty cotton easily, without wasting good fiber. The brush is easy to make and use, and we no longer have box-car trash getting in our work. (K-3248)

Falls Mfg. Co., Granite Falls, N. C.



Make a Memo Holder From a Mouse Trap

If you have an old mouse trap lying around, it can be easily converted into a holder for notes, memos, bills, and other scraps of paper.

Strip the trap except for the base, spring, and jaw. Nail or screw the trap to the wall, as shown, and it will make a handy holder for a quantity of reference material. (K-3054)

Arthur Abbott, Berwick, Pa.

$500 for Best Kink in 1956 - - - $25 for Best Kink Each Month

Plus $5 to $10 for Every Kink Accepted

What Is a Kink?

Any idea that will

- Cut costs
- Improve quality
- Reduce work
- Increase production
- Make work easier

The idea may be one for improving machines, some attachment for a machine, a short-cut way of doing something, a labor-saving device—any idea at all that helps a mill man run his job better or easier.

Send in your Kink now. There is always a contest going on.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1956.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 300 will be asked to select preferred Kinks in each issue. Their votes will select the best Kinks, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

"Train Whistle" Summons Fixer in Large Card Room

We have a large card room divided into two sections by a partition. When the fixer is needed, he usually is in the other section.

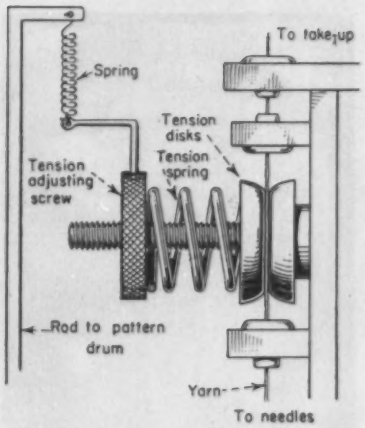
To summon him to a central spot, we rigged up a whistle (arrow) that is blown by compressed air. However, the high screeching noise was very unpleasant and made the operators nervous.

The master mechanic solved the problem by fooling with the whistle until the tone resembled the low notes of an old-fashioned railway-engine whistle. The nostalgic sound does not hurt the workers' ears, yet it penetrates to all parts of the card room and saves much time in locating the fixer. (K-3279)

Store Needles in Wax To Keep Them Lubricated

Knitters and fixers generally keep spare needles in a package, and precious time is often consumed fumbling in the package for needles. To save time, use a cake of paraffin wax as a housewife uses a pin cushion. Dip the needles in head first.

The wax helps lubricate the new needles, and they are ready for instant use. The needles can be placed in the wax during free moments when the knitter or fixer is not busy. (K-3184) *H. J. Haas, Martinsburg, W. Va.*



How To Remove Tension In Hosiery Knitting

Stretch-hosiery yarns require little tension when they are knitted in the leg and foot. However, more tension on the yarn is required during heel and toe knitting to successfully operate the heel spring.

Some machines use a rod that comes between the tension disks to separate them. This method often interferes with the yarn. Here's how to adjust the tension without interfering with the yarn:

Drill a small hole in the edge of the disk-tension adjusting screw, force a length of wire in the hole, and bend the wire in the middle. Then connect the bent part of the wire with a light tension spring to any rod moved by the pattern drum when the machine starts to knit the heel and toe. When the rod moves up, the tension adjusting screw is moved to change the tension on the yarn.

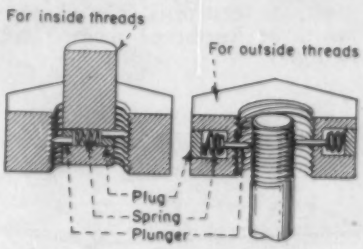
The length of your wire and the strength of the spring will determine the degree of tension required. (K-3183) *H. J. Haas, Martinsburg, W. Va.*

$5 to $10 for any Kink accepted for publication. Each one will be entered in the $25 and $500 prizewinner contest.

Send in your Kink now.

Use a Deodorant Bottle For a Kerosene Dispenser

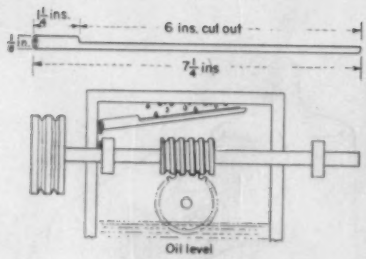
A discarded plastic squeeze bottle, such as is used for deodorants, makes a handy container for liquids on the job. Kerosene, penetrating oil, or cleaning fluid can be kept in the bottle and applied wherever needed by simply squeezing the bottle. The bottle is leakproof and unbreakable. (K-2964) *Robt. Frantz, Berwick, Pa.*



Use Fiber Rods To Clean Threads

It sometimes becomes necessary to clean rust, oil, and sediment from the threads of nuts and bolts. Plungers that will clean the threads without damaging them can be made from fiber or soft-metal rods.

An oversize nut is used to hold the cleaners for outside threads, and a rod can be rigged to clean inside threads as shown in the sketch. (K-2972) *W. E. Warner, Essex, England*



Pipe on Gear-Box Cover Directs Flow of Oil

On two-count Barber-Colman automatic spoolers, the conveyor system is driven from the front gear box. On long spoolers, these boxes sometimes give trouble because of the small amount of oil that reaches the thrust bearing and front bushing.

We solved this problem by raising the oil level in the box until the bottom of the brass gear dips into the oil. This brings the oil up to the worm and causes a large amount of oil to be thrown about in the box.

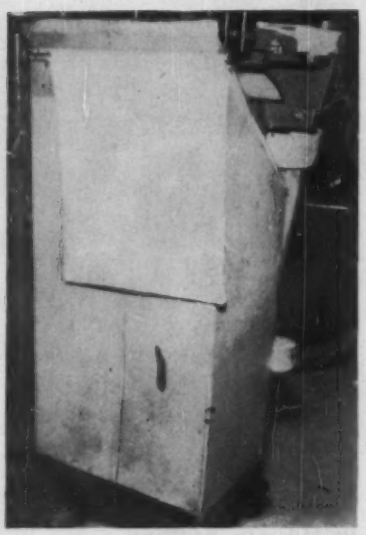
A piece of ⅛-in. pipe was cut as shown in the sketch and welded to the top of the box. This pipe catches the oil that drips from the top of the gear-box cover and directs it down over the front bushing and thrust bearing. A steady stream of oil pours down over these parts. The oil gauge has to be lengthened about 3 ins. (K-3069)

Holder Made of Wood Protects Files From Damage

When files are placed in the tool box or work-bench drawer with other tools, they often become damaged.

Wooden holders can be easily made that will protect the files and keep dirt, grease, and other substances from clogging the teeth.

Take two thin pieces of wood, slightly wider than the file, and use them for covers. Tighten the covers in place with wood screws. (K-3146) *W. E. Warner, Essex, England.*



Neat Canvas Bags Hold Filling Waste

We run a lot of styles of cloth on our 322 looms, which means there are many colors and deniers of filling. So that we can sell it for the highest price, we keep all batteryhand filling waste separate.

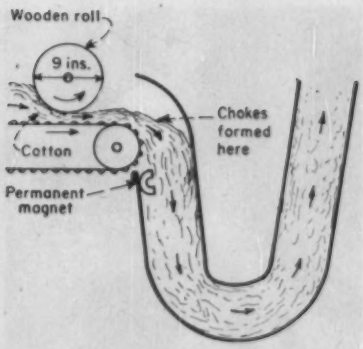
The easiest way to keep the waste separate is to hang a small canvas bag on the front of each empty-bobbin can at the loom. Batteryhands then put the waste in the bag as they tend the battery at each loom.

At the end of each shift, a filling boy takes up the waste. We weigh the waste to find the exact amount made on each shift. If one shift has excessive waste, we point out the waste to the shift foreman by comparing it with the average for other shifts.

Therefore, in addition to getting a better price for our filling waste, we also have less waste. (K-3188) *Schwarzenbach Huber Co., Altoona, Pa.*

$5 to $10 for any Kink accepted for publication. Each one will be entered in the $25 and $500 prizewinner contest.

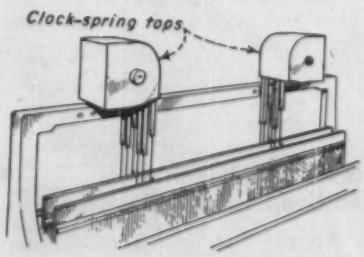
Send in your Kink now.



Wooden Roll Stops Opening-Room Chokes

Our cotton is fed from the openers to the first feeder hopper by a long feed table, a chute, and a pneumatic pipe. We used to be troubled with chokes in the chute caused by cotton piling up at the end of the feed table.

We stopped the chokes by putting a 9-in. wooden roll just in front of the chute. The roll is supported by two bearings, and the bottom is 3 ins. above the feed table. Loose cotton turns the roll and receives a slight compression as it approaches the chute. Since installing the compression roll, we have had no more chokes in the chute. (K-3215) *S. M. Shah, New Swadeshi Mills, India*



Clock-Spring Tops Lift Harnesses on Wide Looms

We mounted two Draper clock-spring tops on our wide Northrop looms, as shown in the sketch, and find that these tops lift the harnesses much better than the conventional top rigging for wide looms. (K-3094) *Carl E. Popper, Kfar Ata, Israel*

We Clean Loom Parts Quickly With Live Steam

We have a quick way to clean pick gears, harness cams, and other parts removed from looms at style changes that will be used again later. We spread the parts out on a wooden rack built over a drainage pit and spray them with live steam from an outlet at the boiler room nearby. The steam cuts off all the black grease and oil.

The cleaned parts dry for a few minutes on the rack, and then they're ready to be placed in bins in the supply room to be reissued when they're needed. (K-3117)

This Handy Hook Cleans Truck Axles

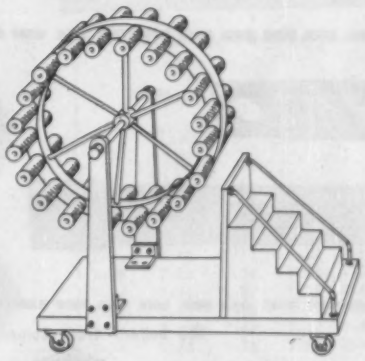
We haul cloth on a train of trucks pulled by a tractor. Strings frequently become wound around the axles of these trucks and prevent the wheels from turning easily. Formerly, it was often necessary to take the wheels off the trucks to remove the strings.

Now, we pull the strings off quickly with a hook made from a piece of flat steel. The hook can be inserted between the hub of the wheel and the shoulder of the axle to catch and remove all the strings that become wrapped around the wheel or axle. (K-3208) *Chas. Westbrook, Trion, Ga.*

Bend Wire Right Way For Electrical Connections

Where an electric-wire connection is made with a screw, the wire should be bent in the direction the screw turns. As the screw is tightened, it will also tighten the wire.

If the bend is made in the wire in the direction opposite to the way the screw turns, the wire will sometimes be forced from the screw and may not hold. (K-3195)



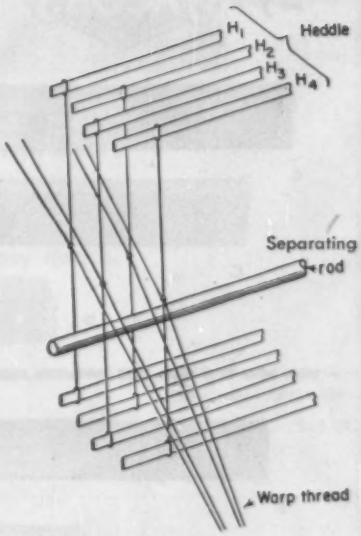
Circular Cheese Holder Makes Creeling Easy

If your operators have trouble creeling high frames such as twisters, here's an idea that may help. Build a "ferris-wheel" cone or cheese holder, as illustrated, and cut out reaching and stretching.

The mobile holder should be made narrow enough to push through your aisles but wide enough to be stable. Three or more steps should enable the operator to reach the highest point on the creel without stretching.

There is nothing easier than taking the packages off the pins and placing empty spools on the pins. However, a box can be attached to the axis for empty spools if desired.

Another modification that is often desirable, especially where large, heavy packages are used, is to rig a ratchet arrangement on the axle to keep the reel from turning from the weight of the packages. Otherwise, take off every other package to equalize the load as much as possible. An inside row of pins can be added if the frames are exceptionally long. (K-3216) *H. J. Haas, Martinsburg, W. Va.*



Separating Rod Simplifies Drawing In

In drawing in warps, we had trouble in selecting ends in the correct order for the dents of the reed. To solve the problem, we put a separating rod between *H1, H2* and *H3, H4*. This method is very effective, and now we don't mistake the order of the harnesses. (K-3093) *Hokao, Fukaya, Fukui, Japan.*

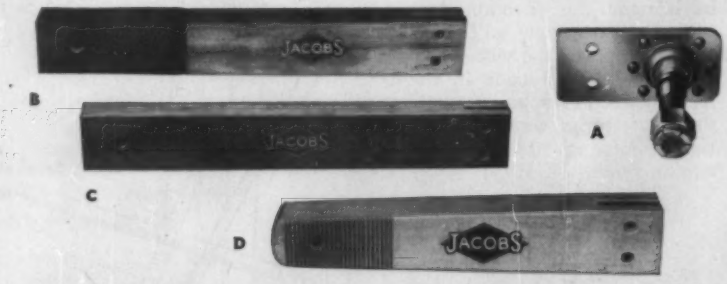
Use This Emergency Saw For Hard-To-Reach Cuts

Once in a while a fixer will have occasion to make a cut in a place where it is impossible to use the hacksaw frame. A broken blade with an improvised handle will usually solve the problem. Wrap one end of the blade with cloth, twine or tape to make the handle.

Small cuts can then be made in places that cannot be reached with the regular hacksaw. It may take longer to make a cut with this improvised saw, but frequently time and parts can be saved by its use. (K-3164) *Bob Abbott, Berwick, Pa.*

Sweepsticks and Connectors

by JACOBS *For Maximum Loom Efficiency*



B

C

A

D

A. VAN-DAR HEAD

A replaceable rod end bearing for all types of JACOBS sweepsticks. Allows close fit on pick arm stud and avoids hole elongation to give a pick that is absolutely even. Heads and bodies are individually replaceable.

B. RUBBERWELD

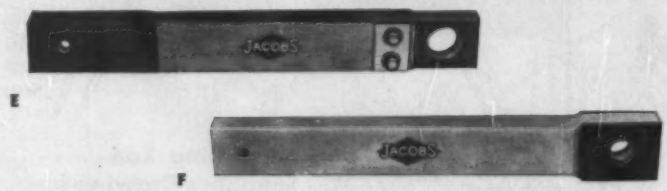
Patented construction of chemically bonded plyweld and neoprene gives the smoothest, most resilient pick known to the industry.

C. RUBBERIZED FABRIC

Molded rubber combined with fabric. Uniform consistency assures maximum strength and length of life.

D. HICKORY

Made of highest grade stock. Economical and long-wearing.



E

F

E. RUBBERWELD (with plastic head)

Has removable head of high-impact plastic. Body is long-wearing, resilient, and replaceable.

F. REINFORCED CANVAS

High quality Army Duck reinforced by plastic blocks on each side of stud hole for long wear.

The Bullard Clark Company

SOUTHERN DIVISION Charlotte, N. C.

JACOBS

NORTHERN DIVISION Danielson, Conn.

G

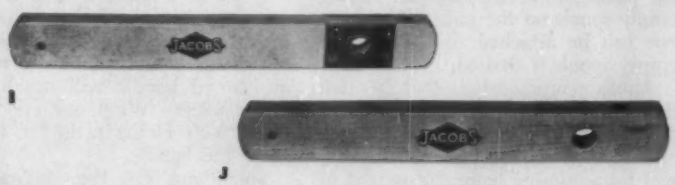
H

G. RUBBERIZED FABRIC

Molded cloth and rubber. Reinforced at stud hole by plastic plates and built up at lug hole for improved performance.

H. LAMINATED

Constructed of highest quality Plyweld or Pakweld, in regular design or streamline style for lighter weight.



I

J

I. REINFORCED HICKORY

Made of highest grade hickory with fiber reinforcements at the stud hole for longer wear.

J. HICKORY

Highest grade hickory but without reinforcements. The most inexpensive sweepstick of the JACOBS line.

JACOBS *Can solve ANY Sweepstick or Connector Problem!*

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. January, 1957

Outstanding NEW LITERATURE
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NO REPEATS . . . Listed here for January are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

Wool cleaning unit—For opening and blending wool, handles 1,500 to 2,500 lbs. grease wool per hr. Bulletin 422. Proctor & Schwartz. (F-1)

Woolen card—84-in. unit comprises five sections from feeder to winding frame. Improved construction and refinements. Davis & Furber Machine Co. (F-2)

Wool spinning frame—Available in 80 to 180 or more spindles. Ring sizes from 3½- to 7¼-in. dia.; 5- to 9¼-in. gauge. Davis & Furber Machine Co. (F-3)

Caustic evaporators—For recovery of mercerizer liquors. Double- and triple-phase units for various recovery requirements. Bulletin SW-201. Swenson Evaporator Co. (F-4)

Lint opener—For opening, blending, cleaning. Steel frame, antifriction bearings. Made in two sizes. Kirkman & Dixon Machinery Co. (F-5)

Spinning frame — For tufted-carpet yarn. Produces yarn from sliver. Packages to 8 lbs. Whitin Machine Works. (F-6)

Spinning frame—Handles fibers to 3 ins. long, drafts 700 to 1 directly from sliver. Edward S. Rudnick. (F-7)

Automatic quiller—For spun or filament yarns. Spindle speeds to 10,000 rpm. Abbott Machine Co., Inc. (F-8)

Sweater machines — Full-fashioned, knitting width 22 to 52 ins., 4 to 16 sections, 16, 18, 20 gauges. Robert Reiner, Inc. (F-9)

Drawing frame—Produces sliver at high rate, of excellent regularity. Built for large cans, has individual motor drive. Saco-Lowell Shops. (F-10)

AUXILIARY EQUIPMENT

Air diverters—For ducting in air-conditioning systems. Turn air with a minimum of resistance. Bulletin F-7912. Barber-Colman Co. (F-11)

Temperature controllers — Indicating controllers adaptable to many uses; 576 combinations of scales, circuits, elements. Fenwal, Inc. (F-12)

Sealed switches — Heat-sensitive switches enclosed in plastic resist corrosion, moisture. Indicate or control heat conditions in liquids, other media. Fenwal, Inc. (F-13)

Process control—Roundup of instruments now required in automatic control of process. Brochure CPI. Leeds & Northrup Co. (F-14)

Industrial tapes—For condensers, spinning frames. Supplied in lengths or made endless. Benjamin Booth Co. (F-15)

Bimetallic thermometers—Calibrated to be 100% accurate at any single point. Ranges —40 to 1,000° F., —10

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to 300° C. W. C. Dillon & Co., Inc. (F-16)

Shuttle care—How to get longer life from shuttles. Brochure from Draper Corp. (F-17)

Cloth guides—Bulletin 22.1 describes guiding equipment for cloth room, finishing, fabricating machines. Askania Regulator Co. (F-18)

Edge controls—Electronically sensitized units that actuate aligning equipment for tenters, cloth-room machines. Intercontinental Dynamics Corp. (F-19)

Mill-cleaning systems—Lint removers for spinning, card, weave rooms. Series of bulletins from Parks-Cramer Co. (F-20)

SUPPLIES & CHEMICALS

Morpholine derivatives — For compounding, catalysts, stabilizers. Bulletin F-8640. Chemicals Dept., Union Carbide International Co. (F-21)

Coatings chart — Compares various coatings and their resistance to many factors. J. Landau Co. (F-22)

Sequestrant—Organic material soluble in water, alcohols, other solvents and electrolytes. Chelates di-tri- and tetravalent metallic ions. Globe Compound Co., Inc. (F-23)

Floor seals—For industrial wood flooring, institutional applications. Vestal Chemical Laboratories, Inc. (F-24)

Polyethylene funnel—Buchner funnels made of polyethylene described in literature from Ace Glass, Inc. (F-25)

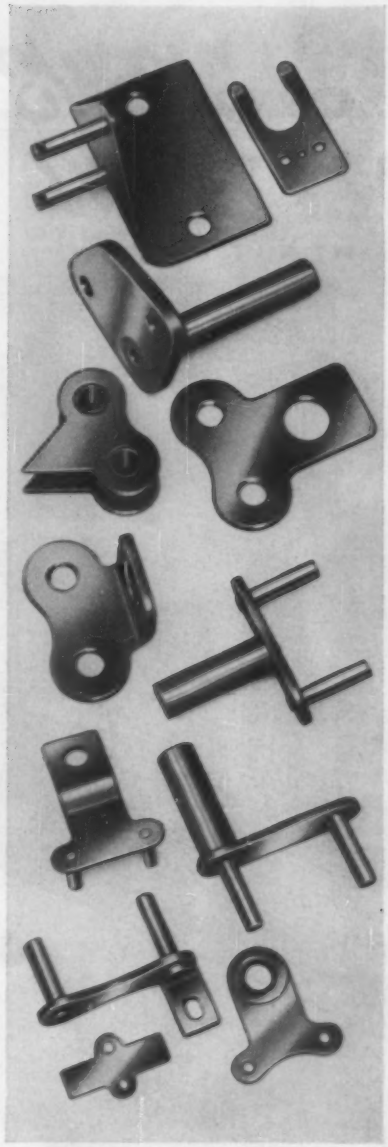
Liquid detergent—For general cleaning purposes. Works in hard water, does not require rinsing. Oakite Products, Inc. (F-26)

Sodium lauryl sulfate—Offered in needle form, reduces dusting. Technical bulletin available from Aceto Chemical Co., Inc. (F-27)

Glycerine—Booklet describes grades, testing, definitions, specifications, and handling methods. Glycerine Producer's Assn. (F-28)

Feedwater treatment — Boiler-scale control discussed in booklet from Olin Mathieson Chemical Corp. (F-29)

Propionaldehyde—Technical bulletin describes uses in resins, polyesters, demulsifiers. Chemicals Dept., Union Carbide International Co. (F-30)



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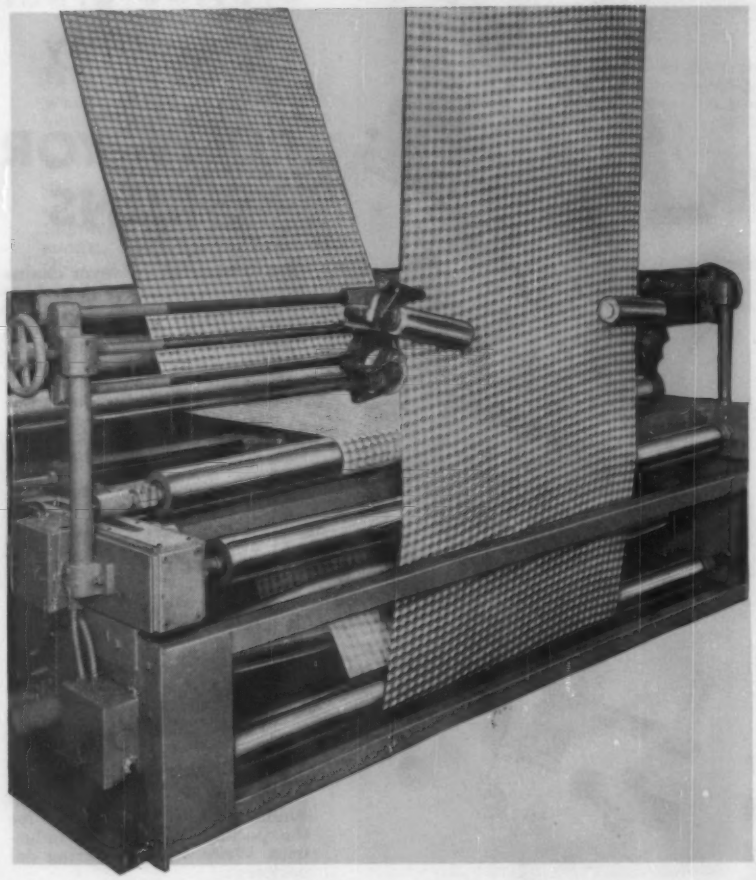

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MAINTENANCE & ENGINEERING

Flexible chain couplings—For connecting motors to machines. Cat. C45-56 describes several types. Morse Chain Co., Industrial Sales Div. **(F-31)**

Building insulation—Cellular glass material for roofs, sidewalls described in booklet FB-107. Pittsburgh Corning Corp. **(F-32)**

Lubrication systems—Automatic systems that handle up to 500 bearing-inches over distances up to 400 ft. Form F-37-25. Alemite Div., Stewart-Warner Corp. **(F-33)**

Corrosion-resistant valves—For use in controlling flow of corrosive chemicals. Valves made entirely of plastics. Chemtrol Corp. **(F-34)**

Portable pH recorder—For field surveys, general outside use. Full pH range indicated in two partial ranges. Bristol Co. **(F-35)**

Sprockets—For single, double, roller-chain applications. Many sizes and bores described in catalog from Acme Chain Corp. **(F-36)**

Industrial motors—Induction motors redesigned for higher efficiency. Bulletin PB 6,000-6. Elliot Co., Crocker-Wheeler Div. **(F-37)**

Sealed bearings—Ball bearings with wide inner rings, self-locking collars. Fafnir Bearing Co. **(F-38)**

Heat exchangers—With removable tube bundles. Capacities, types described in Cat. 1156 from Young Radiator Co. **(F-39)**

Power-transmission equipment—Speed reducers, speed reducers with motors, integral-gear motors listed in Bulletin 191. Sterling Electric Motors. **(F-40)**

GENERAL

Humanics—No. 5 of a series in Cost Reduction Booklets, emphasizes the human issues and problems in labor-management relations. Wheeler Asso., Inc. **(F-41)**

Open-end bins—Portable bins that may be stacked, can be handled with fork-lift trucks. Pressed Steel Div., Republic Steel Corp. **(F-42)**

Pressure-sensitive tapes—Textile applications described in manual from Minnesota Mining & Mfg. Co. **(F-43)**

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What does a woman judge by when she selects her dress or drapery materials? Pattern and color, of course. But it's the look and feel of the *fabric itself* that helps her make up her mind . . . and that's how HYATTS can help make the sale for you!

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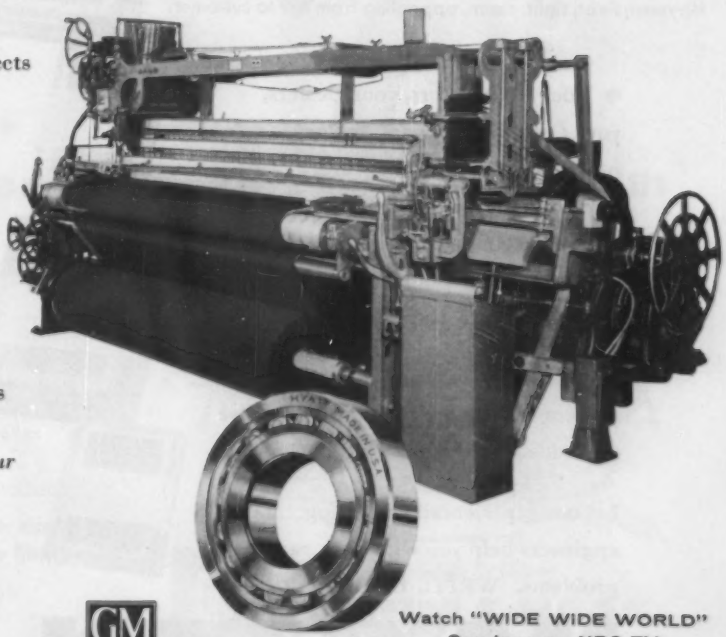

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NEW LITERATURE Continued

Gas-electric fork truck—A gasoline engine drives an electric generator in a 10-ton fork truck described in a brochure from Automatic Transportation Co., Div. of Yale & Towne Mfg. Co. (F-44)

Load clamps—Various types of load clamps to fit different needs described in brochure from Elwell-Parker Electric Co. (F-45)

Records control—Machines and methods to keep record costs in line listed in booklet from Remington Rand Div. of Sperry Rand Corp. (F-46)

Low-lift trucks — Electric platform trucks of 4,000 lbs. capacity listed in Bulletin 6016A from Automatic Transportation Co., Div. of Yale & Towne Mfg. Co. (F-47)

Foreign investments — Brochure describing advantages of locating a plant in Australia available from Australian Research Services Ltd. (F-48)

Cyanoethylated cotton—A report on progress in this aspect of chemical modification of cotton can be procured from American Cyanamid Co., Petrochemicals Dept. (F-49)

Materials handling—Trucks, storage racks, in many models and sizes described in Catalog 29-1 from Lewis-Shepard Products, Inc. (F-50)

WHAT THE TARIFF MEANS TO AMERICAN INDUSTRIES, by Percy W. Bridwell; published by Harper & Brothers, New York, N. Y., for the Council On Foreign Affairs; 304 pages, $5.

An old problem is viewed from the angle of the effects of tariffs on in-

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dustries rather than at the diplomatic level, where tariffs are looked upon as instruments affecting the regard other nations might have for us.

Mr. Bridwell selects eight industries, among them being the woolen and worsted branch of the textile industry, as case studies.

By means of interviews, visits to factories, and reference to existing material, the author concludes in part that tariffs have a national as well as a local effect and that to maintain the status quo in many businesses, tariffs must exist.

A TECHNOLOGY FOR THE ANALYSIS, DESIGN, AND USE OF TEXTILE STRUCTURES AS ENGINEERING MATERIALS, by Walter J. Hamburger; American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.; 50 pages, paper, $1.50.

Dr. Hamburger, in this 29th Edgar Marburg lecture, reviews textile craftmanship and the beginnings of modern textile science in our own times and then proposes an extension of engineering practice as applied to other structural materials to the development of a sound textile science.

Acknowledging the earlier work of Harold DeWitt Smith along similar lines, Dr. Hamburger points out that scientific analysis of fibers can lay the groundwork for improved textiles and that by the further development of objective techniques and instruments, we can more freely establish textile structures as engineering materials.

SYMPOSIUM ON pH MEASUREMENT; American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.; 104 pages, $2.50. (ASTM members, $1.85).

The subject of pH is covered from a number of angles by experts in their fields.

The expanding field of pH measurement in industry during the past 10 years has produced problems and required the development of new techniques that are given in considerable detail in this symposium.

New developments in pH measurement, the gradual acceptance of an international set of values, pH measurements as applied to analytical chemistry, and how pH measurements are applied in nonaqueous media comprise some of the contents of this volume.

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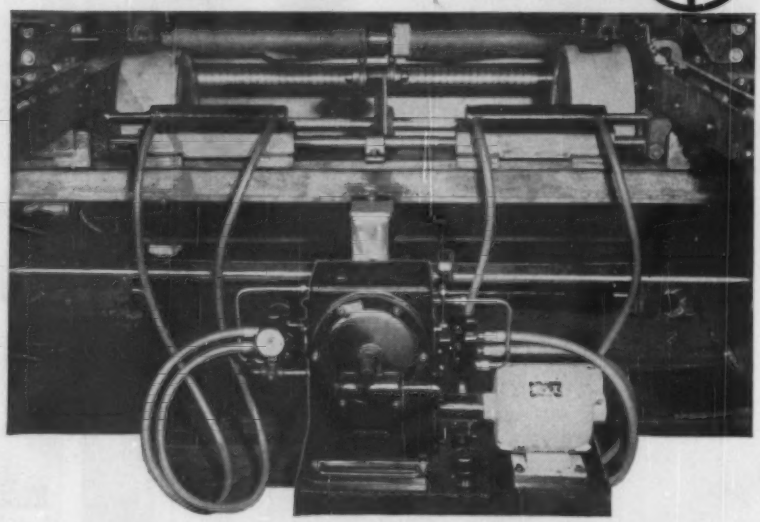
Askania Regulator Company NEWS

Automatic Cloth Guides for
TENTER FRAMES, LABEL MARKERS, TUBERS and EXAMINERS



PRODUCE MORE AT LOWER COST!
New Askania Application Bulletin Shows HOW

ASKANIA'S new REGULATOR APPLICATION BULLETIN NO. 22.1 is now off the press and available to the textile industry. It will be furnished upon request to anyone interested in specific details concerning the application of ASKANIA Automatic Cloth Guides to Tenter Frames of all types ...to Tubing and Examining Machines...to Label Marking Machines. It will explain how the Cloth Guide automatically handles any cloth, including flimsy lace, delicate silks, coarse mesh cloth, synthetics, *without contact with the cloth.*

WELL ILLUSTRATED—You'll find the above illustration showing the Askania Automatic Cloth Guide Control applied to a tentering frame typical of the 11 special photos and drawings used to provide the type of information you need to evaluate your own cloth guide potentials.

IMPORTANT FACTS—*For instance, Bulletin No. 22.1 contains the answer to these questions:*

1. How ASKANIA controls assure clipping, pinning closer to the selvage edge.
2. How the controls can be quickly and easily installed on new or existing machines by any competent mill mechanic.
3. How the operator is freed to examine the cloth.
4. Why the controls react to the flimsiest material with instant speed and powerful force on even the heaviest tenter frames.

MODEL SELECTION—Get full information on ASKANIA Cloth Guide Models and how to select the most economical unit for your own use. For your personal copy, write today to Askania Regulator Co., 274 E. Ontario Street, Chicago, Illinois.

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HYDRAULIC, ELECTRONIC CONTROLS & SERVOS, GENERAL SYSTEMS, ENGINEERING & COMPUTER SERVICE, VALVE ACTUATORS & CYLINDERS

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CONTROL BOBBINS

CONTINUED FROM PAGE 123

ticipated.

"We expect the cleaning and creels to cut spinners' labor cost 30% and the roving to reduce it another 11½%. Some of our spinners don't like creeling from buggies, and patrolling is slowed down. Creeling time is about the same."

Mill I—"Umbrella creels, suction cleaning, and large-package roving reduced warp spinners' cost 23%. Work assignments were increased from 2,652 to 3,432 spindles.

"When we went from 10x5 to 12x6½ FS-2 roving, labor cost was reduced 43%. The frames are equipped with the Adams stop motion."

Mill M—"When suction cleaning was installed, we took out the middle creel boards and installed step brackets, which resulted in better cleaning. We use 10x5 and 12x6 roving in the modified creels."

BINDERS FOR NONWOVENS

CONTINUED FROM PAGE 81

If the backing is to be heat-sealed to the vinyl, a blend of polyvinyl chloride and nitrile latices is preferred.

A typical formulation would be a 50-50 blend of nitrile and vinyl latices in an emulsion carrying 20% solids. The web is saturated with the solution, and excess emulsion is squeezed out. The final amount of binder is controlled to suit the purpose.

Webs prepared in this way are usually dried in hot-air ovens. The fiber content may range from nylon-acetate to rayon-cotton.

For garment applications, resistance to laundering and dry cleaning is necessary; so when nitrile latices are used in binders for these fabrics, they are generally cured.

A general formula for this sort of binder is:

Nitrile latex	100 (parts)
Zinc oxide	5
Sulfur	2
Accelerator	2

(All on a dry basis)

Some latices show improved resistance to dry cleaning when a small amount of a thermosetting resin is included in the formula.

Fast accelerators cut curing time for the nitrile-latex applications to only a few minutes at 200 to 220° F. If a thermosetting resin is included, the temperature must be raised to 300 to 350° F.

Problems Still Exist

Nonwoven fabrics still exhibit poor

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They've learned that National Travelers are carefully made to meet their most exacting standards . . . that each traveler in each box is uniform in weight, dimensions, temper and finish. They've learned, too, that precision balanced, quality-controlled National Travelers consistently deliver more pounds of first class yarn at higher spindle speeds.

Whatever you're running — cottons, wools, synthetics, or blends — it will pay you to let an experienced National-Sterling Engineer recommend the right traveler for your particular spinning or twisting operation. For prompt service, write, wire or phone National Ring Traveler Company and Sterling Division, 354 Pine Street, Pawtucket, R. I. or Southern Office and Warehouse: P. O. Box 112, Gaffney, S. C.

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tensile strength in spite of recent advances. There is no relation between the fiber strength and the strength of the nonwoven fabric. Nylon-fiber fabrics are not proportionately stronger than cotton nonwoven fabrics.

The main reason for this anomaly lies in the binder. The adhesion of the binder to the fibers is generally less than the adhesion of the binder particles to each other, particularly when emulsions are used. Another factor in web strength is binder migration, caused by a capillary effect in drying. If cans are used to dry the webs, migration is less if the first few cans are run cooler than the normal drying temperature.

Formulations with a low solids content tend to migrate more than those with a high solids content. Where other considerations can be met, a high solids formulation often overcomes the migration problem.

Ageing Gives Trouble

Binders based on nitrile polymers and polychloroprene tend to discolor on ageing, which discounts their good points in apparel fabrics. Polyvinyl chloride and polyvinyl acetate resist yellowing but produce stiffer fabrics, and plasticizers that overcome stiffness reduce strength and may not withstand dry cleaning.

Acrylate polymers are completely saturated compounds that are highly resistant to yellowing from the action of light or heat. They produce binders that are soft but lack resilience and are not very resistant to wet and dry cleaning. At present, they are expensive.

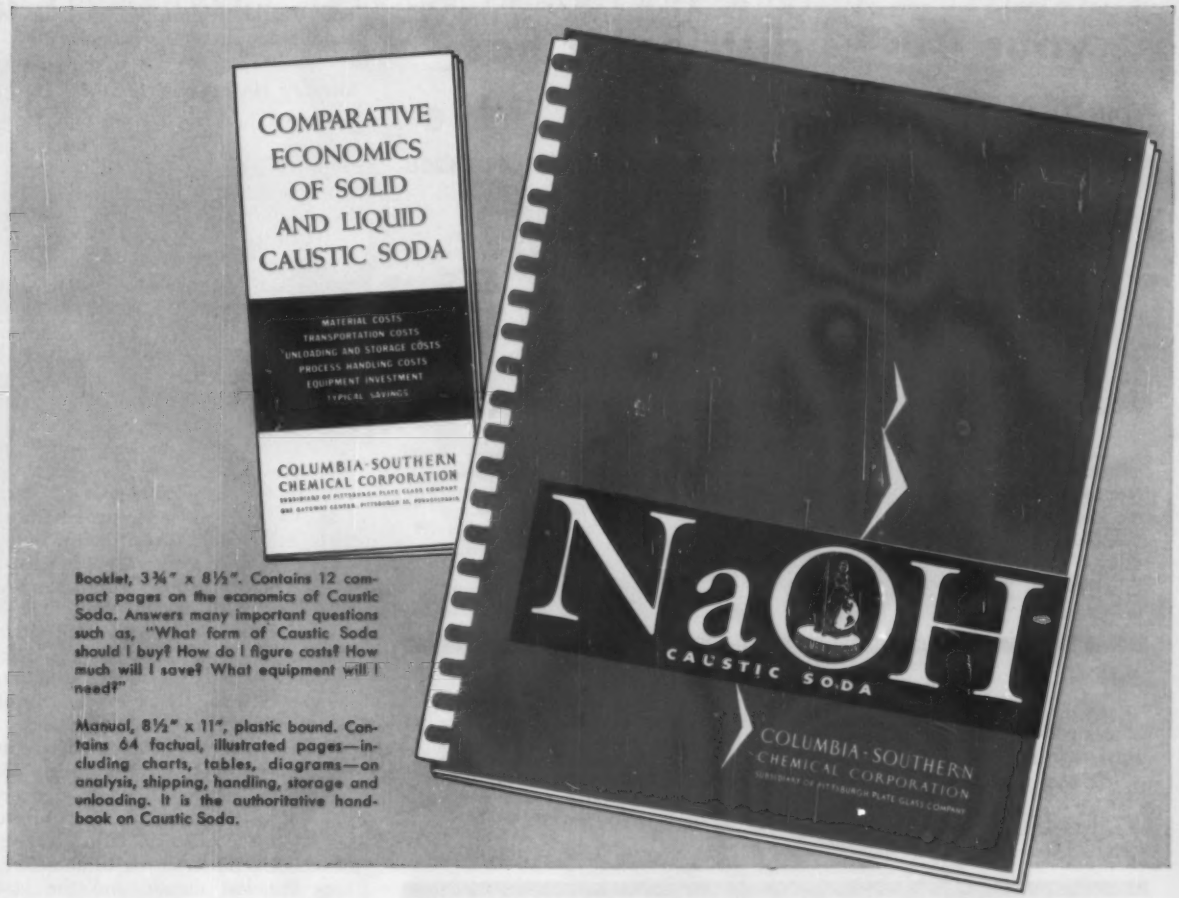
Research now going on will result in improved binders that will be free of the faults of the materials now available.

1956 COTTON

CONTINUED FROM PAGE 83

time. The increasing use of mechanical harvesters, the necessity for more heat in drying, and larger amounts of gin cleaning machinery—together with greater speed in handling rapidly picked crops—may be influential factors.

However, little cotton is machine-harvested in the Southeastern states, and changes in ginning practices have been limited; yet the trend toward rougher yarn is equally as sharp there as in all other areas. Consequently, ginning and harvesting practices cannot be wholly responsible. Changes in fiber properties of cotton varieties



Booklet, 3¾" x 8½". Contains 12 compact pages on the economics of Caustic Soda. Answers many important questions such as, "What form of Caustic Soda should I buy? How do I figure costs? How much will I save? What equipment will I need?"

Manual, 8½" x 11", plastic bound. Contains 64 factual, illustrated pages—including charts, tables, diagrams—on analysis, shipping, handling, storage and unloading. It is the authoritative handbook on Caustic Soda.

Do you have these two valuable books on caustic soda?

If your work involves the handling, use, purchasing, or economics of Caustic Soda, and you do not have these books, you are urged to write for your free copies today. Ask for "Caustic Soda Manual" or "Caustic Soda Economics Booklet." If you want both, please specify. Please use company stationery and send your request to Columbia-Southern Chemical Corporation, One Gateway Center, Pittsburgh 22, Pennsylvania.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION
SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY
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your Wood's distributor has the right v-belt for your drive

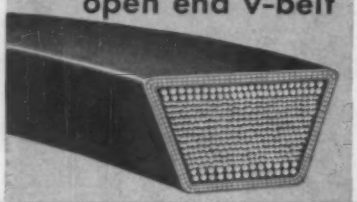
for single belt drives

fhp v-belt

A complete line of endless fractional HP-V-Belts, for light industrial and domestic uses. Available from stock in standard sections and lengths.

for lineshaft "dismantle to install" drives

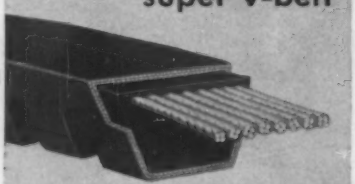
open end v-belt



Can be used in place of endless V's in emergency. Square woven body anchors fasteners—no pull out. Same HP as standard belts. Available in A, B, C, and D cross sections in rolls, half rolls or cut lengths.

for short center high-speed drives

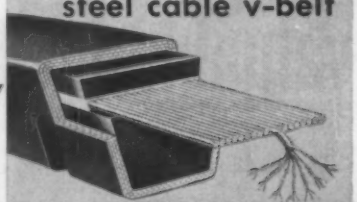
super v-belt



Rated 40% above standard—fewer belts mean less maintenance. Notches dissipate heat, increase flexibility. All belts oil resisting and available for static conducting.

for medium center heavy-duty minimum take-up drives

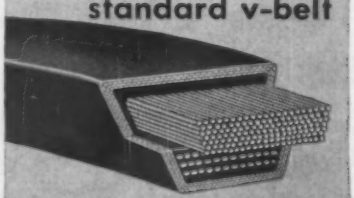
steel cable v-belt



Continuous steel cables provide super strength, practically zero stretch. Notches dissipate heat, increase flexibility. Highest HP ratings. Available in A, B, C, and D cross sections.

for longer normal speed drives

standard v-belt



Multiple-ply, continuous rayon cords withstand shock loads. Straight sidewalls assure proper fit, even wear, best-grip. Available for heat and oil resisting (ORS) static conducting (SC).

No one type of V-belt is the "cure-all" for every drive requirement and operating conditions; therefore we are always in a position to recommend and supply the V-Belt best suited to your particular needs. Send for literature and prices, or consult your Wood's Industrial Distributor.

T. B. WOOD'S SONS CO.

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and weather conditions may be of significance in yarn appearance.

Grades Hold Their Own

Grades held their own, and there have not been any sharp trends in staple length in the various states. This condition is true in spite of the fact that during the period 1947 to 1956, the proportion of handpicked United States cotton fell from about three-fourths to one-half. Mechanical picking represented 17% of the 1955 crop, with a high of 67% in California and a low of 2% in most of the Southeastern states and Tennessee. The Central states mechanically picked about one-fourth of their crop.

To cope with marked trends in mechanical harvesting and the increased tendency toward hand-snapping, the proportion of gins equipped with dryers increased from 36% in 1945 to 68% in 1954. Gins equipped with lint cleaners now constitute more than one-third of the gins in the United States, compared with none in 1945. Over 90% of the Far-Western gins have these facilities, compared with about one-fourth of the gins in the Southeastern states.

The extent to which modern gin machinery can overcome rough-harvesting and machine-harvesting effects on lint will determine the future quality of the American crop. Taking into consideration the trends in quality over the last decade and the vast improvements made in gin machinery, it is likely that future qualities will continue to be acceptable by the mills.

Cotton-breeding and improvement programs will continue to be a factor in maintaining and improving inherent fiber qualities.

LEICESTER KNITTING SHOW TRICOT & RASCHEL

CONTINUED FROM PAGE 89

the machine runs at 150 courses per min. on 2/48s worsted yarn.

An automatic let-off controls the warps, and there is a waxing attachment across the face of the warps. (A-41)

Three-Bar Tricot Machine

The 84-in. three-bar tricot machine shown by Karl Mayer GmbH., Obertshausen, Germany, was knitting a fancy pleated fabric at 800 courses per minute. The machine used an additional pattern wheel to stop one beam feeding yarn to the needles at the intervals when pleats were made. (A-42)

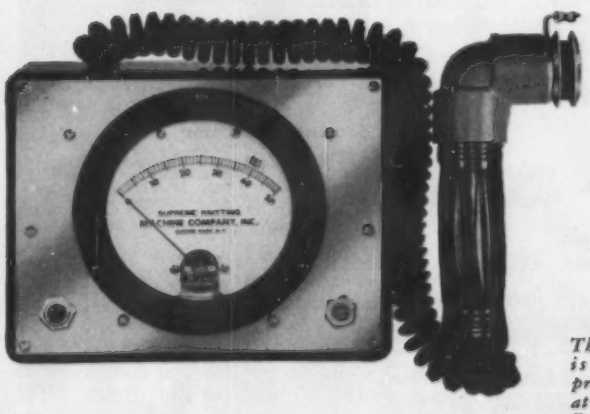
A Tremendous Advance In Knitting Quality & Efficiency

Accurately measures rate of yarn intake at each feed of any make stationary yarn stand machine and results in precise "matched feed" stitch setting. Accomplishes exact stitch uniformity *in a few moments time – while machine is operating under power–without any loss in production time.*

Speed detector is applied to yarn as it is fed into each feed; rate of yarn intake is registered on meter; while the machine operates, each feed is set to the identical dial reading.

This new Supreme engineering development opens a new era in knitting quality and mill efficiency.

1) Enables you to *insure absolutely uniform quality output* – stitch-to-stitch – yard-after-yard – machine-to-machine.
2) *Eliminates horizontal streaks* and all cloth damages caused by misaligned stitch setting.
3) Insures uniform yield – by simple calibration the meter reading may be used to check yield of fabrics *as they are being knitted.*
4) Increases output – machines never stopped to set stitches or check yield. The Stitch-O-Meter converts the time-consuming, difficult and inaccurate procedure of "marked yarn" hand stitch setting to a quick, simple and extremely accurate method. Instantaneously measures the intake rate of many, many yards of yarn being knitted under power rather than just the few yards measured under the old hand method.
5) One Stitch-O-Meter can handle any number of stationary yarn stand machines *of any make.* A Stitch-O-Meter for use with revolving yarn stand machines is now being readied for early delivery.



The Stitch-O-Meter is available for prompt delivery at $265.00 each, F. O. B. our plant.

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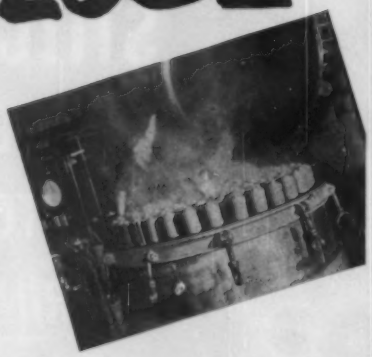
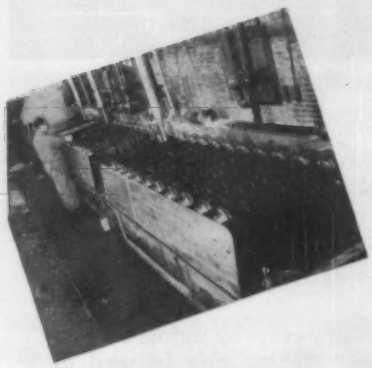
Your YARN SHOULD BE DYED BY GLOBE



SINCE 1865

Globe has been one of this country's largest and most progressive dyers of cotton and other natural fibers.



EVER SINCE

man-made yarns were first introduced, Globe has led in the development of dyeing methods, and actual dyeing of synthetic yarns.

Globe has the technical skill, the experience, and the wide range of equipment necessary to provide the best method of dyeing for your every yarn dyeing need.

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1865 1957

One of America's Largest Yarn Dyers.

Globe does package dyeing on tubes, skein and warp dyeing and bleaching, warp mercerizing, and sizing.

Yarns we process include cotton, rayon, nylon, worsted, linen, blend and novelty yarns. Also Acrilan—Dacron—Orlon.

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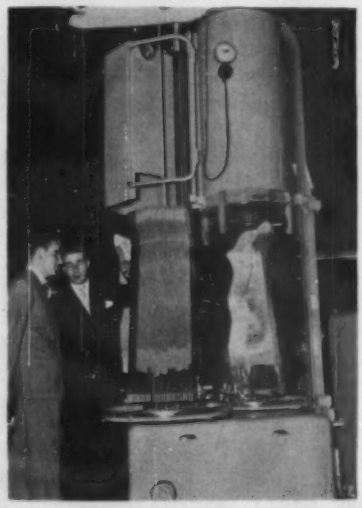
LEICESTER KNITTING SHOW

CONTINUED FROM PAGE 87

Hosiery-Examining Machine

Crowther Ltd., Thurmaston, Leicester, England, showed the Crowther-Peck hosiery-examining machine, which has an expanding form and delivers hosiery in three different grades.

The time cycle for each stocking is 1¾ secs. There is an expanding heel form to fit all heels. Each grade is counted. An air nozzle blows the stockings through the hollow form at 60 lbs.-per-sq.-in. pressure. **(A-43)**



Boarding Machine

The boarding machine for women's hosiery shown by Ets Maurice Heliot, Troyes, France, preboards or postboards 250 doz. women's full-fashioned or seamless hosiery in 8 hrs. Two operators run the machine.

There are three chassis that rotate. Each chassis carries 24 or 30 forms. One set of forms is in the autoclave while one set is dried and the other set is placed on the forms. The complete cycle is 1 min. 50 secs. **(A-44)**

EASY, FAST CURE FOR "COASTING" FRAMES!

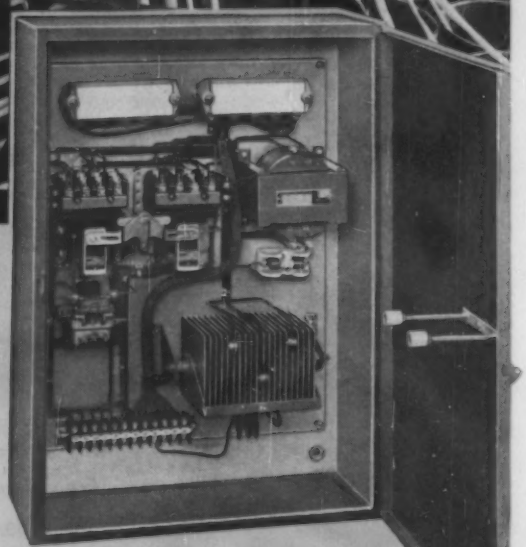
Your roving or spinning frame motor acts as its own brake when used with this

NEW Qwik-Stop CONTROL

"Coasting" frames waste time, material and money. But it's often difficult and expensive to add conventional brakes to existing frames.

This new **Qwik-Stop** electric braking control is the answer. It requires no frame modification. Simply replace your motor starter with this unit and *presto*—you have brakes. A wide variety of braking torque is available by a simple jumper reconnection. Dependable timing of braking cycle with easily adjusted pneumatic timer.

***Write** for Bulletin 8922 which gives the complete story. Address Square D Company, 4041 N. Richards Street, Milwaukee 12, Wisconsin.*



This **Qwik-Stop** unit provides complete control for starting, protecting and braking roving or spinning frames.

NOW...EC&M PRODUCTS ARE A PART OF THE SQUARE D LINE!

SQUARE D COMPANY

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Thousands of Perfect Packages

for only $1.25 per flyer

By the time your flyers jump, wobble, or vibrate noticeably they have already produced thousands of pounds of inferior roving thus causing poor quality yarn and fabric seconds. When flyers start choking up—when roving jerks—or when ends start running over at the top or the bottom of the bobbin, your flyers are beginning to wear and are costing you money. An Ideal Flyer Rebuilding job will give you new flyer performance and new flyer length of service. This full service costs only $1.25 for most sizes, and includes exclusive features such as full length die-swaging, heat treating for extra rigidity, dynamic balancing for your operating speeds, and the Ideal rust and tag resisting finish. This is a complete rebuilding job—not a quick once-over repair. Let an Ideal representative check your flyers and spindles—without obligation. We will be glad to loan you replacements while yours are being rebuilt.

Ideal Machine Shops, Inc., Bessemer City, N. C.

Continuous Service to Textile Mills Since 1925

ELECTRICAL BRAKES

CONTINUED FROM PAGE 99

While the frames were running, an electric solenoid was energized to expand the brakes. At solenoid burnouts, the frame often continued to operate for indefinite periods before the spinning-frame fixer found the hot brake. Then the solenoid was replaced. It was rewound later in the mill electrical shop.

Less Maintenance Is Required

Since the DynAC units have been installed, there's been a reduction of maintenance cost of approximately $1,000 per year per 100 spinning frames.

The solenoids on the old brakes were rated 60% power factor, 0.70 amps. or about 230 w. Power cost was reduced approximately $2,300 per year for 100 spinning frames.

With the new setup, the magnetizing current in the high side of the transformer of the DynAC unit are continuous. Under no-load conditions, the no-load DynAC watts are 21.

Estimated power cost for one DynAC unit for six frames is approximately $35 per operating year for 100 frames. The frames are not stopped frequently for doffing, and the power consumption during stopping is negligible.

Saving Is $30 per Frame

The combined saving of DynAC in power cost and maintenance cost over the old mechanical brakes is at least $3,000 per year per 100 spinning frames.

Spinning-room fixers, supervisors, and mill electricians like the electric braking system. This system eliminates excessive downtime experienced when a solenoid failed. Any necessary maintenance on the DynAC is performed while the spinning frame is running.

PICKING MOTION

CONTINUED FROM PAGE 106

The sweep of the pick, which is the distance that the picker moves, should be 10½ ins. on looms from 66- to 80-in. reed width. Sweep should be 11 ins. for looms 82 to 90 ins. wide and 11½ ins. for 92- to 98-in. looms. It is sometimes necessary to vary these settings slightly because of unusual types of weaves or other local conditions.

Before making any change in these recommended settings, the loomfixer should check the picking motion thoroughly. He should be certain that all parts are set correctly and that no

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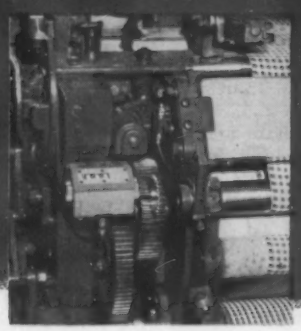
THIS COMPLETE VEEDER-ROOT "Countrol Package"

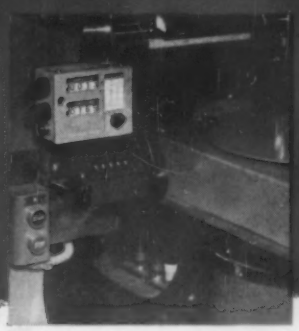
gives you AUTOMATIC UNIFORMITY all through your Mill . . . with New VEEDER-ROOT COUNTERS

. . . on Looms | **. . . on Frames**

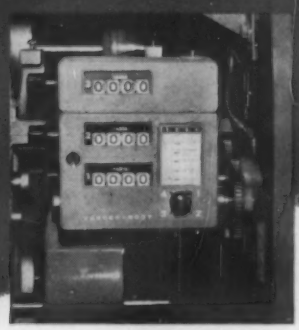
2-3-4 Pick Counter on Loom



Cut Meter on Loom



2-3-4 Hank Counter and Predetermining Counter on Drawing Frame



2-3-4 Yardage Counter and Predetermining Counter on Spinning Frame

On looms, 2-3-4 Pick Counters keep accurate production records and provide a basis for wage payment . . . while Cut Meters help maintain uniformity of cut-lengths of cloth, which is insisted upon today by the cutting-up trades.

On frames and other preparatory equipment, Hank, Yardage and Predetermining Counters hold can-variation to the minimum . . . and make it possible to run the largest economical packages.

This complete Veeder-Root "*Countrol* Package" adds up to better, automatic uniformity all through the mill. And that's why it pays *any* mill to get this Package of new and modern Veeder-Root Counters, when modernizing present machinery or buying new. Get in touch with the nearest Veeder-Root office *today*.

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"The Name that Counts"

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The question most frequently asked by consumers when buying soft goods. "Will it fade?" is even ahead of "What is it made of?"—"How much does it cost?"—or "Who manufactures it?"

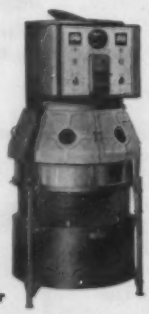
A nation wide survey made by the American Cyanamid Company of over 33,000 buyers and merchandise managers in department and specialty stores reveals this consumer attitude about color stability.

The seriousness of the problem of color failure is disclosed in the returns showing that color fading, running or rubbing off, brings merchandise returns to over 83% of the stores reporting. Among the worst areas are curtains, draperies and upholstery, say 38.64% of store respondents; dresses, 39%; blouses, skirts, sportswear, 31%; knitwear, 27.5%; slip covers, bedspreads, 27%; sport shirts, 23.6%; corduroy products, 20%; pajamas, 18%.

Atlas Fade-Ometers and Launder-Ometers permit accurate and dependable assessment of the degree of color fastness to light, washing and bleeding. Standard methods of test and of reporting results enable the manufacturer to provide guarantees which are recognized and understood by both buyer and seller.

Producers of soft goods who can advertise and sell their product as having a specific colorfastness rating have a price advantage over merchandise marketed without the color stability assurance provided by these Atlas Ometers.

Atlas Launder-Ometer


Atlas Fade-Ometer

ATLAS ELECTRIC DEVICES CO.

4114 N. Ravenswood Ave., Chicago 13, Ill., U. S. A.

Sales representatives in principal cities throughout the world.

parts are worn badly enough to need replacing. Standard settings cannot be maintained with wornout parts.

Position of the picking shoe on the shaft is very important. If the shoe is set too far ahead, a harsh pick may result. Standard setting for a 66- to 80-in. loom is $1\frac{7}{8}$ ins. from the finished hub of the picking shoe to the bearing in the back picking-shaft stand. The correct distance for 82- to 86-in. looms is $2\frac{1}{8}$ ins., for 88- to 90-in. looms $2\frac{3}{8}$ ins., and for 92- to 98-in. looms $2\frac{5}{8}$ ins.

Shafts Will Twist

The alignment of the picking shaft is also important. The shaft should be level, and on looms equipped with $1\frac{1}{2}$x1-in. picking shafts the distance from the top of the picking shaft to the bottom of the bottom shaft should be 4 27/36 ins. A gauge is easily made of sheet metal to use for this setting.

Picking shafts will sometimes twist and let the picker shoe drop down out of position. The picker roll will then hit only the top part of the shoe and will cause a loss of power. The picking shoe and roll will also be damaged. A twisted or warped picking shaft should be replaced as soon as found.

A systematic method of overhauling the picking motion should be adopted.

1. The timing and sweep measurements should be checked.
2. The picking shaft should be checked for straightness and alignment. The shaft should move freely without end play.
3. The back stand picker-shaft bearing should be checked for wear.
4. Setscrews on the picker or picking arm should be checked for tightness.
5. The top of the picker shoe should be checked and the shoe replaced if worn.
6. The power adjuster should be set so that the sweep stick is about 1 in. above a horizontal level line.

Check Protection Motion

When a loom begins to bang off, it is good practice to check the protection motion and also the friction on the motor drive. If the driving motion and protection motion are out of order, they will affect the efficient operation of the picking motion.

If a loomfixer will use these standard settings for the picking motions of his looms, he will profit in three ways: It will be easier to locate the source of trouble when a loom is not operating correctly, the loom parts will last longer and need fewer adjustments, and the looms will produce more and better cloth.

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ACETIC ACID · ACETIC ANHYDRIDE · FORMALDEHYDE · ACETALDEHYDE · METHANOL · VINYL ACETATE MONOMER · VINYL PROPIONATE MONOMER · ACETONE · PROPYLENE GLYCOL · NORMAL PROPYL ALCOHOL

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the logical source
for textile chemicals

ACETIC ACID

for example . . .

The ability to provide a steady supply . . . to provide dependable delivery . . . to offer on the spot technical service . . . these are just a few of the many good reasons why more and more textile manufacturers have come to rely on Celanese for their Acetic Acid supply . . . and for a growing list of basic textile chemicals produced by Celanese.

Through its expanded production facilities, its intensified research program, through its more stringent quality control techniques, Celanese is able to supply Acetic Acid of consistently higher quality, at stable cost, in larger volume than ever before. It is the *logical* source for textile chemicals. For further information, write: Celanese Corporation of America, Chemical Division, Dept. 571-A, 180 Madison Avenue, New York 16, N. Y. Celanese®

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stocked in over 40 cities, Celanese Acetic Acid can be delivered on time anywhere in the U.S.A.

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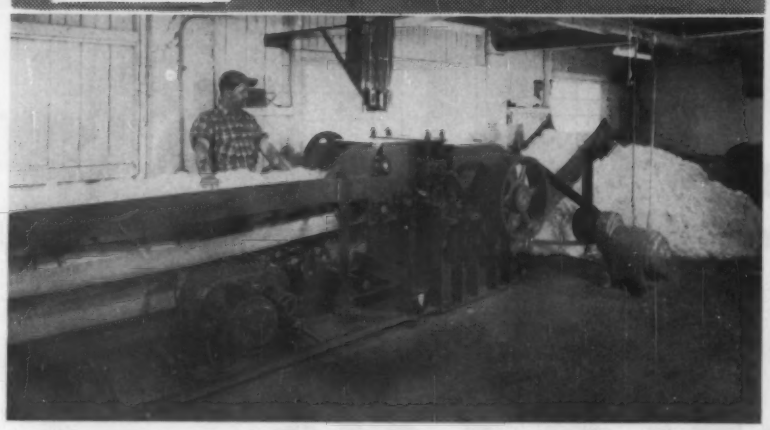
TAYLOR STILES
TEXTILE CUTTERS



CUT SYNTHETIC WASTES OR TOW WITHOUT FUSING

Tangled Nylon, Orlon, Dacron and other synthetic thread waste or tow, etc., tend to fuse when cut. Fusing leaves hard lumps in the yarn which cause trouble in spinning.

Because of special design features, Taylor Stiles thread waste and tow cutters cut synthetic fibers without fusing, assuring lump-free yarn that can easily be spun.

Other design features of these Taylor Stiles cutters practically eliminate stock jamming. And, should a jam occur, separate motor-driven feed and discharge provide for immediate stoppage of the machine.

The feed motor is equipped with a reversing switch which will reverse the apron and clear most of the jam.

Finally the entire feed assembly may be pushed back on casters to permit quick, easy cleaning, if necessary.

Whether you are interested in cutting synthetics without fusing, increasing production, or improving quality, you will want to learn more about the new Taylor Stiles Cutter.

Write for four page, two color brochure today—illustrating and describing Taylor Stiles thread waste and tow cutters. No obligation.

TAYLOR, STILES & COMPANY

15 Bridge Street **Riegelsville, New Jersey**

Mail coupon for descriptive folder.

Taylor, Stiles & Co.
Riegelsville, N. J.

Send us at once brochures describing your Thread Waste and Tow Cutters. We understand this involves no obligation.

Firm .....

Individual .....

Street .....

City ..... State.....

ELECTRICAL BRAKING

CONTINUED FROM PAGE 92

If the torque is increased and the frame is stopped too quickly, the tapes on the frame are thrown off the whorls. The d.c.-braking volts required to produce the desired braking torque vary with different spinning frames but usually range from 60 to 70 v.

With group d.c. braking, several spinning frames are braked from one controller. The controllers presently in service on cotton spinning frames brake four or six frames from one controller.

All the controller parts are mounted in a single cabinet. The controller can be mounted between spinning frames, on the wall, or overhead.

TIMELY MAINTENANCE

CONTINUED FROM PAGE 107

Fan Corrosion Is a Problem

Rusting and corrosion of air-conditioning fans are major problems in seven mills. Efforts of mills to arrest rust are:

Mill A—"We have a schedule for painting our fans and duct work. We paint them at least every two years.

"Equipment in all departments except the weave room stays in good condition. But the duct work, fan housings, and hangers deteriorate in the weave room even with close maintenance. We find that Du Pont Submarine Primer is as good as anything for preventing rust."

Mill B—"We have tried several different paints for the interior of our air-conditioning fans in the six years they've been in operation, but we have found nothing that will hold up satisfactorily.

"In 1955, we painted the interior of two fans with an asphaltic coating. Inspection a year later showed that this coating seemed to hold up better than anything we have tried.

"Because we have only a limited time available for maintenance work on these fans, we don't spot-paint rusted areas during the year. We paint the interior of all the fans during a one-week shutdown period."

Mill C—"We get best results by thoroughly cleaning and painting fan blades and housings once a year."

Electric Tools Are Grounded

Practices for grounding electric power tools above 110 v. show that most mills are taking proper precautions against accidents. Tools grounded are drills, grinders, saws,

← For more data, write this page number on Reader-Service card.

the hidden pluses of nylon for carpeting

You are selling positive performance characteristics when you sell nylon carpeting. It's sound merchandising for you, and true value for your customer, when you offer the performance pluses that make nylon today's best buy in carpeting.

HERE'S WHY:

+1 **Permanent Textures.** More *permanent* than wool, cotton or rayon.

+2 **Resists Abrasion and Scuffing.** Will outwear comparable carpeting made from *any other* fiber.

+3 **Resists Crushing and Matting.** More crush resistance and less matting than comparable wool, rayon or cotton floor coverings in service.

+4 **More Resilient.** More resilient than comparable wool, rayon or cotton floor coverings after continued usage.

+5 **Cleanable.** Nylon is an easy-to-care-for fiber. The round, smooth nylon fibers prevent dirt from clinging. May be spot-cleaned and shampooed. Dries quickly.

+6 **Economical.** The strongest and toughest of all carpet fibers, nylon will out-wear comparable wool and rayon fabrics, thus be actually less expensive in the long run.

+7 **Mothproof, Insect-Resistant.** Never a worry about moths! Carpet beetles cannot attack nylon carpeting.

+8 **Decorator Colors.** Nylon can be dyed in lasting colors and an attractive range of shades.

Any reliable manufacturer can deliver these benefits in carpeting made from 100% IRC NEW NYLON fiber. In addition, manufacturers can, and are delivering superior carpeting using respectable percentages of nylon and featuring many of the pluses listed above.

THE NEW Nylon Staple I·R·C

INDUSTRIAL RAYON CORPORATION, Sales Offices: 500 Fifth Ave., New York 36, N. Y. 627 Guilford Bldg., Greensboro, N. C.

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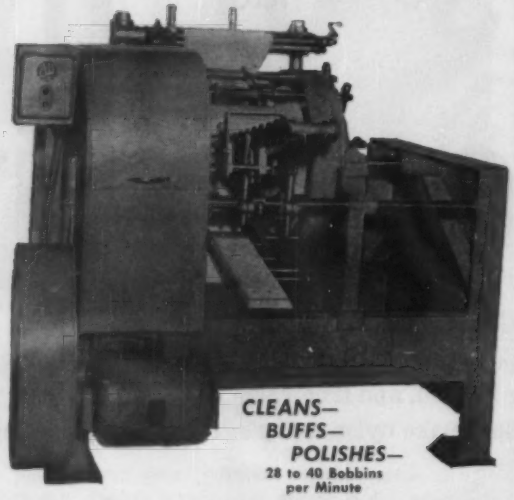
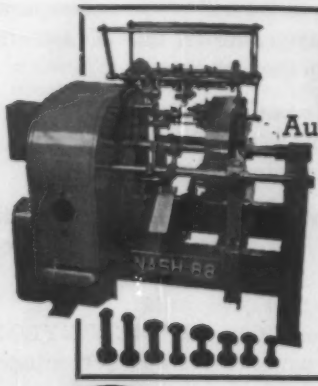
The Standard of Quality

In
TEXTILE
MACHINES



Automatic Quill Polisher

No. 79—Designed to keep your Bobbins in perfect condition . . . . Fully automatic operation . . . . No harsh abrasive action, and original finish coating of quill remains intact. Eliminates broken picks—burnishes quills to high lustre. Repeated polishing with the NASH 79 will not damage quills or reduce their life. Used in many leading mills.



NASH 88

Automatic Bobbin Refinisher

Keeps Bobbins in Top Condition At Lower Cost

- Handles most types of flanged bobbins—
- Separate Burnishing Assembly—
- 10-Bobbin per minute speed requires minimum set-up time—
- Cleans as well as finishes—

Ask for Illustrated Bulletins and Complete Information

SPECIAL FINISHING MACHINES — SINCE 1890

J. M. NASH *Company*

2364 N. 30th Street • Milwaukee 10, Wisconsin

and floor sanders. Practices by mills are:

Mill A—"We ground tools through a fourth wire at the switch box on the machine to the electrical grounding system."

Mill B—"The only machines of this type that we use are 550-v. three-phase floor-sanding machines. The machines are grounded with a four-wire cable; the fourth wire is grounded to the frame of the machine and to the conduit where the machine is connected."

Mill C—"On portable tools, we use receptacles and plugs that have one pole grounded. Cords have enough conductors to give one conductor for grounding only.

"On stationary equipment, we use a grounding conductor in a conduit with the other conductors or a separate conductor run to a suitable ground."

Mill D—"All portable electrical tools have an extra conductor in the service cable for protective grounding. This ground connection is made automatically when the service cord is plugged into the electrical outlet."

Water-Line Sweating Is Stopped

Excessive sweating and dripping of cold-water lines in the mill are troublesome in all mills, and precautions have to be taken to eliminate the dripping. Attempted solutions by mills are:

Mill A—"We have tried to reroute all cold-water pipes. Where rerouting is impractical, we use foam-glass insulation, which has done a good job."

Mill B—"On lines with city water or supply water, we use drip pans under the lines and run the excess water that does not evaporate to sewerage lines.

"On cold-water lines for drinking water, we use cork covering. Water for humidification, plumbing, etc., is warmed to room temperature."

Insulation Prevents Sweating

Mill C—"We have tried many methods in an attempt to eliminate dripping water pipes. Our only successful method of eliminating this condition is to insulate these pipes with a magnesia-type pipe covering."

Mill D—"We prevent sweating of cold-water lines by insulation. On humidifier lines, we apply 100° F. heat at the water tank. Heating the water normally prevents sweating in highly humid areas."

Mill E—"For regular water lines, we have insulated the pipes to successfully eliminate dripping. For humidifier water lines, we have put heaters in our humidifier tanks and heated the water to stop dripping."

← For more data, write this page number on Reader-Service card.

KARAGHEUSIAN *furnishes*
Americana Hotel with over

2 Miles of Carpeting

made on a Cobble Brothers
YARDAGE TUFTING MACHINE

Pictured above is one of the luxurious suites in the new Americana Hotel at Bal Harbour, Florida, showing the Karagheusian Carpeting which was selected for use throughout the $17,000,000 structure.

216" BROADLOOM LOOP PILE MACHINE

Shown at right is the Cobble Scroll Type Pattern Machine for making the above type fabric as well as Scrolls, Florals, Geometrics and Random Textures.

Cobble Brothers Machinery Co., Inc.

RIVERSIDE DRIVE ☆ PHONE OX 8-3481 ☆ CHATTANOOGA, TENN., U.S.A.

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Costs Less Because It Gives the Most in Service

When selecting unions it will pay you to remember 2 things: (1) Darts can be used over and over again — on location after location (2) On location after location, they give a drop-tight seal. How can you beat this combination for economy . . . at any price?

QUICK FACTS

- Extra wide bronze seats resist pitting and corrosion
- Nut and body of air-refined, high test malleable iron are practically unbreakable
- Heavy shoulders can withstand the toughest wrench abuse
- Each Dart is individually vacuum-tested

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AVAILABLE THROUGH YOUR LOCAL DISTRIBUTOR

CONTINUED FROM PAGE 109

checks these measurements. The fabric is run from the box over a lighted frame, where it is inspected again as it is rolled.

Fabric from the other machines is spot-checked over the lighted frame. The first roll from each new order is also run over the lighted inspection frame.

Each machine has a ticket that clearly shows the type of needle and sinker for that machine. The same ticket also shows the date of the last needle and sinker change. A complete set of needles and sinkers is changed when the fabric shows bad needle and sinker lines. The needles and sinkers that are removed are used for replacements in machines with the same needle age.

Yarn Stands Are Improved

Yarn stands are modified so that extra cones can be tied pigtail fashion without standing one cone on another. An 18-in. fluorescent tube is fixed under the bottom stop motion of jersey machines to give good light on the fabric for inspection.

When Orlon yarns are run, the machines are segregated from machines running cotton to prevent lint from the cotton contaminating the Orlon. Sheets knitted from cotton yarn are hung from the ceiling around these machines.

Machines are set up according to the master knitting ticket. The number of stitches per inch is prominently displayed on each ticket. A yield test is taken at the start of each new order by weighing and measuring the length of one roll and calculating the yards per pound.

The Speedotex yarn-speed meter is used when major stitch changes are made. The machine is changed and spotted in the usual manner until the correct number of stitches per inch is obtained, and the machine is finally adjusted with the yarn-speed meter.

In addition to rib and jersey fabrics, many types of pattern-wheel and striped fabrics are made. Elastic fabrics are also knitted. Fabrics sent by General's customers to be duplicated must be analyzed for yarn type, yarn number, stitch pattern, and yield.

Fabrics are made from many different yarns in numbers ranging from 12s to 38s. These yarns are supplied by General's customers and no errors are permitted, but the practices followed at General enable Mr. Boxer and his staff to turn out high-quality fabrics with a minimum of waste.

← For more data, write this page number on Reader-Service card.

Can you parallel a loom picker?

What's the proper tension for a V-belt? Who sells sequestering agents? Where can I get a roll-curing oven for handling coated fabrics? Who am I? Doesn't anybody know anything around this mill?

Relax! Stop worrying! Here's a way to be twice as smart as you are . . . to put twice as many productive hours in your day . . . to have your own special Research Department right on your own desk, always within reach.

Here's a whole mobile library of mill headache cures, of fast, accurate answers—all compacted into 354 working pages of FACT FILE . . . as only the resources of the leading publisher in the field can dig them out, check them, classify them, and package them. It's the bonus-book you get with your regular TEXTILE WORLD subscription—in fact, maybe you've got it out there on your desk right now. Thousands of well-informed mill men use the FACT FILE every day. Get the habit. It pays.

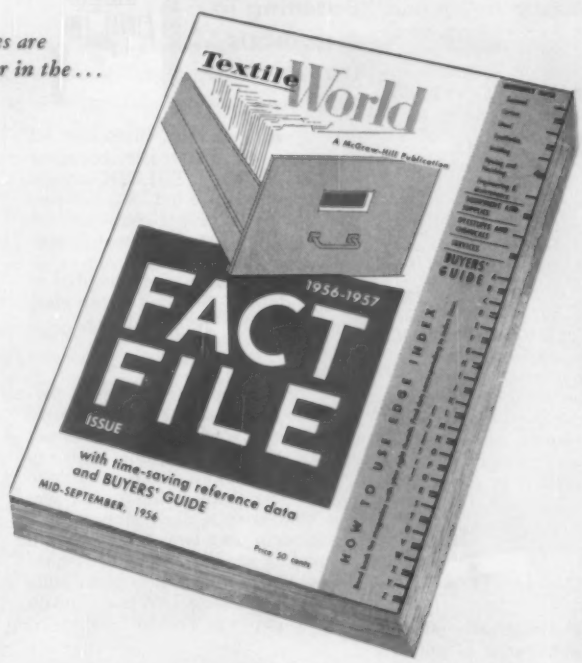
A SECOND SET OF BRAINS

A walking encyclopedia of reference data . . . *General, Cotton, Wool, Synthetics, Knitting, Dyeing and Finishing, Engineering and Maintenance.* Loaded with worth-their-weight-in-gold charts, tables, formulae.

A complete, classified, easy-to-find-it Buyers' Guide when you have to know, and fast . . . who makes and sells *Machinery and Equipment, Chemicals, Dyestuffs, Supplies, all sorts of Services.* In fact, well over 2,600 items listed!

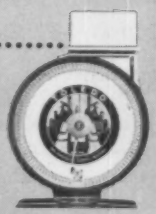
An all-in-one-place consolidated catalog of data-packed, highly informative material from the leading manufacturers in the field—*covering every variety of product and service.*

Don't fret—chances are you'll find your answer in the . . .



New TOLEDO Weight Data Systems

Originating, Transmitting, Processing, Recording



Digital Weights Transmitted Anywhere

- Adding Machine
- Electric Typewriter
- Tape Punch
- Card Punch
- Digital Indication

Toledos now provide electronic wings for your weights! A great time-saver combined with Toledo accuracy! Even though the weights originate in production, inspection, testing, shipping or receiving, the weight data travels instantly for remote digital recording in the form you want it. This new forward step brings a closer than ever link between good weight control and high accuracy in accounting records.

Dial location wherever you choose with Electronic Toledos

A new type of Toledo—the Electronic Load Cell Scale—eliminates mechanical connections between platform and scale head. This gives new flexibility to testing as well as weighing applications. Dial head can be located wherever desired. Also, the weight data can be processed in a variety of recorders and office machines. Ideal for many dynamometer, motor truck, hopper and custom test device applications.

Batching in Automatic Interlocked Systems

This Toledo cabinet interlocks 22 scales in an automatic batching system. Through TOLEDOmation all ingredients are fed into successive batches in proper sequence, including operation of gates and feeders. In addition, all dials are automatically scanned and the digital weight data is recorded on an electric typewriter for each batch.

Automatic Bulk Weighing

You get *printed and totalized weight records* instantly—on a remote electric adding machine—with this Toledo Automatic weighing, recording and totalizing system. Its job is to keep cost-control tab on bulk material such as flour going into truck or carload shipments.

Product Testing and Sorting

Toledos today automatically check and classify a wide range of parts. Here leaf springs for autos are tested and classified automatically by this custom-engineered Toledo at the rate of 600 an hour!

Whether you are moving forward to a plant-wide weight control system, or are considering the closer linking of your weighing with accounting through modern Toledo weight data processing units, you will find that a discussion with a Toledoman may be helpful. We will be glad to send booklets on remote digital weights, or on "a plant-wide look at weighing". Write Toledo Scale Company, Toledo 1, Ohio.

TOLEDO®

HEADQUARTERS FOR SCALES

NEW FINISHING RANGE

CONTINUED FROM PAGE 116

is long enough to carry a second stack of cans not yet installed.

The basic equipment installed in the new bay consists of a Morrison 15-ton air-set pad coupled to a 90-ft. Winsor & Jerauld tenter. A swing and a roll-type batcher complete the delivery end.

Ahead of the pad and suspended from the ceiling is a stainless-steel scray. The scray is provided with a pair of delivery rolls whose surface speed is synchronized to that of the pad for pulling goods out of boxes. In handling roll goods, the delivery rolls can be run at twice the speed of the pad so rolls can be sewn on without stopping.

This two-speed effect is obtained from the primary drive by means of a jack shaft that transmits power to the delivery rolls through a belt-and-pulley drive. Each end of the delivery-roll shaft has a clutch pulley that can be engaged to drive the rolls at normal or double speed as required.

The pad is equipped with an extra large box provided with two sets of immersion rolls. The extra dips help considerably in getting thorough saturation of the goods when the range is used for direct dyeing.

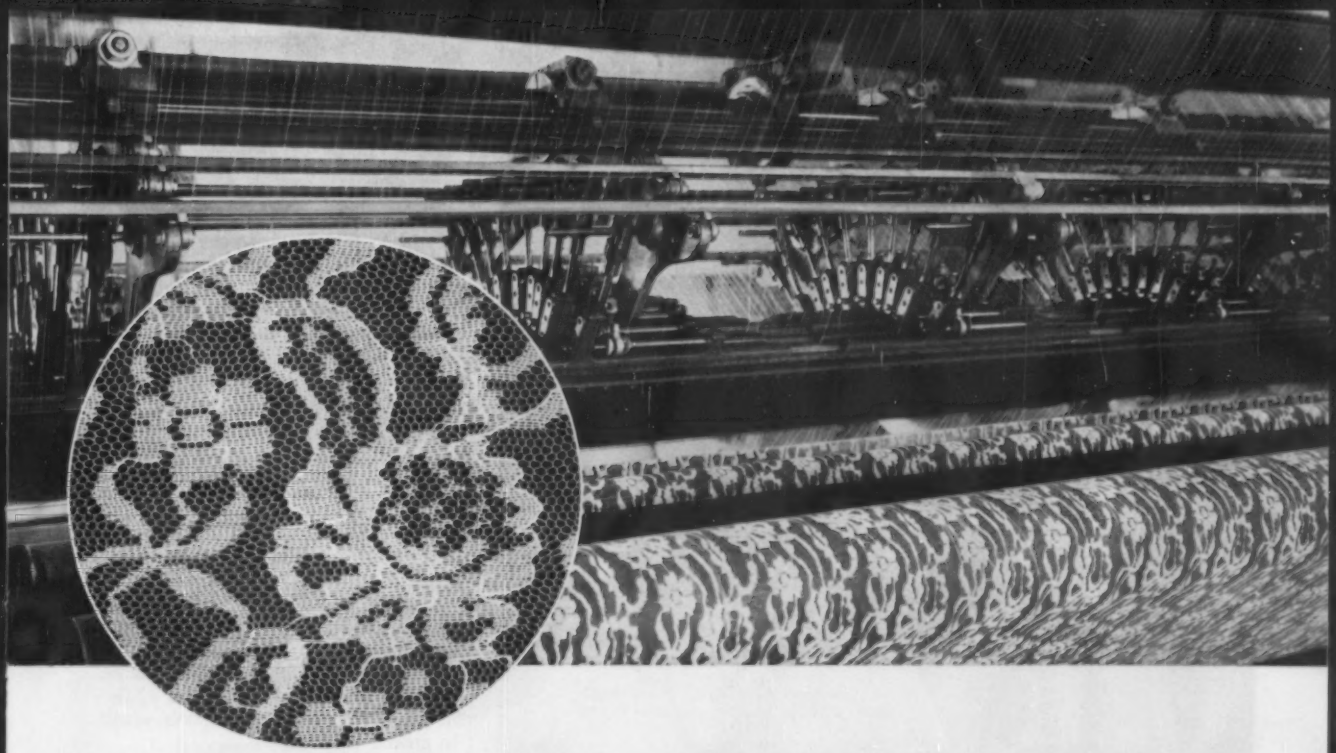
A circulating pump is attached to the pad and is used both for circulation during a dyeing run and to pump unused liquor back to the mixing tank. Returning the liquor to the tank is especially helpful when dye formulas are adjusted at the start of a run, and of course it cuts waste to a minimum.

Range Has Own Power Supply

A Century a.c.-d.c. motor-generator set supplies d.c. power for the entire range. A central control panel to one side of the pad mounts all motor controls and the switches for the fans that provide hot air for drying.

One well-thought-out feature of the control area is the location of the resets for the motor-generator unit at the operating level. Resets are often located directly at the motor-generator set, which may be some distance away—as is the case at Kerr—and unhandy to get to. The lower temperature at floor level also helps to keep resets from kicking out partly because of extreme heat in the area of the motor-generator set.

The tenter is housed in an Andrews & Goodrich housing that carries three 25-hp. fans and a small exhaust fan at each end. Circulation of air is controlled so that little or no hot air



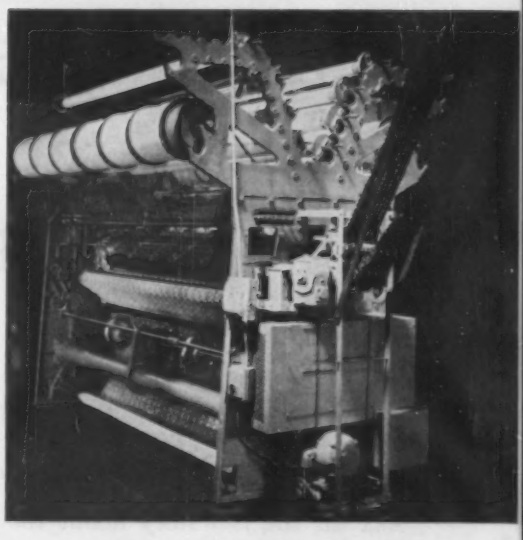
You can see why the NEW KIDDE KNITTER is revolutionizing the lace industry

Look at that lace. It's elaborate, intricate and fine – *much* closer to imported lace than any other made on knitting machines. Ten guide bars on the Kidde Raschel Knitter have made these incredibly beautiful designs possible – and have revolutionized the whole lace industry. The ten guide bars even give you liners to outline the gimp. And consider the speed! – up to 300 courses per minute. It will run with anything from 2 to 10 guide bars and it'll make virtually anything you want from tulle to elastic fabrics. No wonder it's already the most widely used Raschel type machine in the world.

If you specialize in any one of the following fabrics: elastic fabrics, tulle, and various types of net, lace and lace edgings, shoe cloth, laundry nets, sport shirtings or underwear fabric, or if you need versatility encompassing many of these types, the Kidde Raschel Type Knitter can give you faster, more economical, more dependable production.

SEND FOR FABRIC SAMPLES

We will gladly send you swatches of fabric and complete information on the range, speed and quality of production possible on the Kidde Knitter. Write today for details to Department KLG1.



The new Kidde 10-bar Raschel Knitter

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

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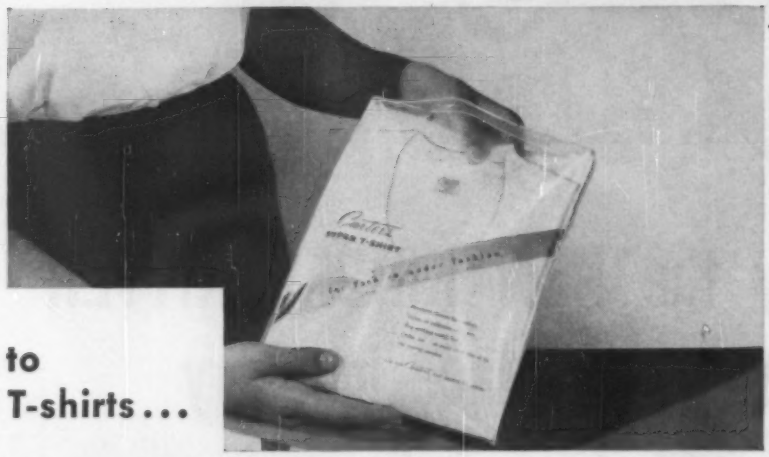
From carpets...



to T-shirts...

Bemis is the textile industry's top source of packing and packaging

Whatever your needs . . . sturdy waterproof bale and roll covers* and bale caps*—burlap Tite-Fit Tubing*—paper covers* for textile rolls—burlap piece goods . . . and now, Flip-Close* and other fast-selling polyethylene packages . . . Bemis is your top, dependable source.

Ask for the *full* story about the help Bemis can give you.

*Bemis *developed* these.
It's natural we know how to make them better.

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BEMIS BRO. BAG CO.

escapes from the housing into the room. Steam at 125 lbs. pressure supplies the fin-and-tube heaters used to heat air for drying.

Coupled with the drying cans, the tenter can produce 4.00-yd. goods at up to 175 yds. per min.

The new addition to the plant was tied into the older area by knocking out the majority of what had been the outside wall. Enough supporting columns were left to carry the floors above. This work was done while the plant was operating and required considerable planning to keep dust and rubble out of goods in process.

MAINTENANCE TIPS

CONTINUED FROM PAGE 121

spools that are poorly wound, some spools with not enough rub or condensing applied to the roving, and many spools that are small in diameter. Roving spools should be at least 12 ins. in diameter. Large-size spools result in greater efficiency.

The winding of spools should be improved so that the roving will not slough off over the side of the spool head. Good roving spools will reduce waste and end breakage.

The spinning-room overseer is responsible for yarn size, turns of twist per inch, using the right-size traveler, and the efficiency of the frame. A good maintenance program will keep his frames operating in sound condition to produce the quantity and quality of yarns needed.

DACRON-COTTON BLENDS

CONTINUED FROM PAGE 127

Heat-setting and dyeing simultaneously

Absence of cracks or rope marks

Proper Finishing Necessary

Dacron-cotton blends that have been made from suitable yarns can be finished to produce a fabric with minimum pilling tendencies. The key to manufacturing is the recommended twist multiplier of 4.00. The important factor in finishing is a thorough brushing and a double singeing operation.

Heat-setting is usually done between brushing and singeing unless the Thermosol process of dyeing, in which the heat-setting is accomplished in the same operation, has been used.

To get dimensional stability, compressive shrinking follows heat-setting; and a calendering may precede the

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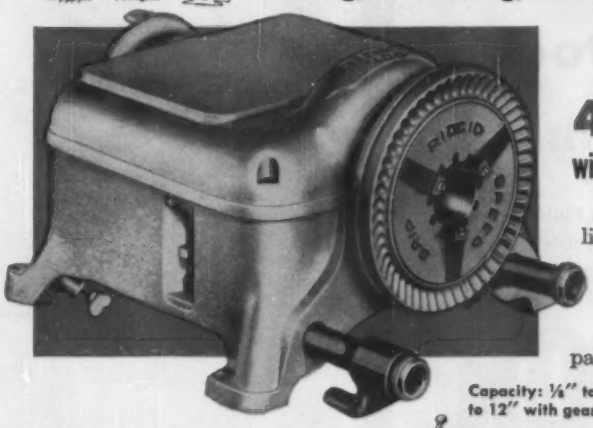
. . . you can no longer afford to do it by HAND

Save Time, Cut Job Costs

Cutting, Threading, Reaming Pipe with this Extra-Speedy



RIDGID 400A Power Drive

with SPEED CHUCK . . . instant grip, forward, reverse

More work more easily when this powerful little power drive turns pipe, conduit or rod for your hand tools. Rapid action Speed Chuck guaranteed to hold tight forward or reverse; replaceable jaw teeth for long life. Light, compact, portable. Buy it at your Supply House.

Capacity: ⅛" to 2" pipe, conduit; to 12" with geared tools; ¼" to 2" bolts.

RIDGID 504 for Power Threading

Quick-opening self-contained 1" to 2" threader for faster threading with power drive. Easy setting to size.

RIDGID Work-Saver Pipe Tools

The Ridge Tool Company • Elyria, Ohio, U.S.A.

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for superior finishes...

complete removal of size is a first essential

RAPIDASE®

UNEQUALLED FOR DE-SIZING AT HIGHEST TEMPERATURES AND AT HIGHEST SPEEDS

In concentrations to meet every requirement . . . in liquid or powder form . . . RAPIDASE is universally used for cottons and all fabrics containing man-made fibres.

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STEEL

Every kind in stock

Immediate shipment

Principal Products: Bars, Structurals, Plates, Sheets, Tubing . . . Carbon, Alloy and Stainless Steels, Machinery and Tools, etc.

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lumps in your opening line

It costs nothing to find out if your present equipment is handling your fibers efficiently—and it may prevent poor work, insufficient cleaning, waste, and lost production.

Surveys made by Dodenhoff engineers show that the aprons on over 30% of today's opening equipment are out of date. In many cases, only simple changes of pin sizes or slat respacing were necessary. Call on Dodenhoff for a free check-up on your equipment. And for opening equipment and aprons of unmatched efficiency, always call on Dodenhoff first.

New and reworked Textile Aprons **Beater Slats**

Waste Machine Cylinders **Kirschner Beaters**

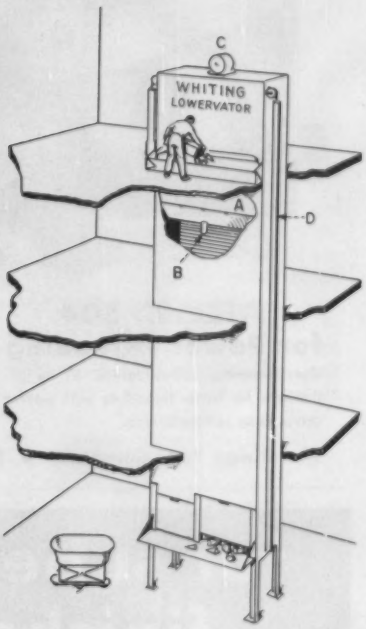
W. D. DODENHOFF CO.
INCORPORATED
GREENVILLE, SOUTH CAROLINA

shrinking operation if extra softness of hand is required.

The production of a Dacron-cotton-blend fabric with little or no tendency to pill depends in great part on proper yarn construction and the finishing operations of brushing and thorough singeing.

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 140



Bobbin-Handling System

A system, Whiting Lowervator, for lowering full bobbins of yarn to another level is announced by Whiting Products, P. O. Box 210, Camden, S. C. The sketch shows a system installed to lower bobbins from a third-floor spinning room to a basement weave room.

The system has a duct reaching from the spinning room to the weave room. Bobbins are stored in the duct and released from a chute in the weave room to batteryhand carts.

A carrier, A, holds two doff-box loads of full bobbins and travels up and down in the duct. The carrier has a hinged bottom. Spinning doffers dump their boxes into the carrier.

Two counterweights in two tubes, D, are attached to the carrier. The loaded carrier goes down the duct at speeds controlled by a governor, C.

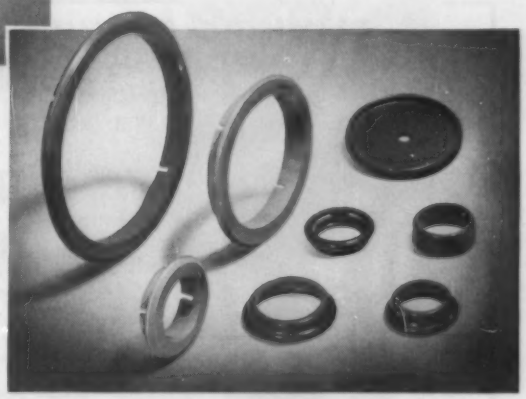
When the carrier reaches the level of the yarn in the duct, probe B, shown below the carrier, contacts the yarn and releases the hopper bottom. As soon as the yarn is emptied, the

SERVING THE TEXTILE INDUSTRY

Spaulding PARTS AND EQUIPMENT

Textile parts fabricated by Spaulding from Spaulding-made materials have a unique combination of properties suited for the precise needs of the textile industry. These parts have great mechanical strength, are light in weight, highly resistant to wear, and their extremely smooth finish assures freedom from snagging. No better Textile parts are made anywhere.

Spaulding Textile Parts include *headless package tubes, take-up tubes, sizing tubes, Kelly rolls* and *lap rolls,* as well as various types of *spooling caps, redraw caps* and *pirn caps.* And remember, for all receptacle and materials handling needs, Spaulding best serves the Textile Industry.



SPAULDING FIBRE COMPANY, INC., TONAWANDA, N. Y.

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CHICAGO 25, ILL.
4770 Lincoln Avenue
CHICAGO 38, ILL.
5604 West 63rd Street
CLEVELAND 14, OHIO
2108 Payne Avenue
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19035 Detroit Rd., Rocky River
DAYTON 2, OHIO
136 So. Ludlow Street
DETROIT 1, MICH.
4612 Woodward Avenue
FORT WAYNE 6, IND.
2301 Fairfield Avenue
LANSING 10, MICH.
2021 South Cedar Street
LONG ISLAND, N. Y.
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LOS ANGELES 15, CALIF.
1325 San Julian Street
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101 Central Avenue
Westfield, N. J.
NEW YORK 55, NEW YORK
384 East 149th Street
ST. LOUIS 5, MO.
7247 Olive Street Road
ST. LOUIS 17, MO.
1500 Big Bend Blvd.
SYRACUSE 3, N. Y.
1206 East Water Street
TONAWANDA, N. Y.
310 Wheeler Street
TORONTO, ONT.
106 Lake Shore Drive E.
Port Credit, Ont.

For more data, write this page number on Reader-Service card. →

Cuts Production Cost

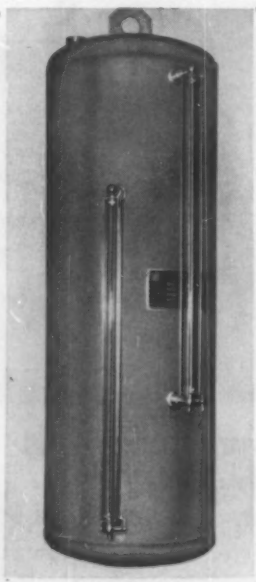
on Mens', Womens' Sweaters

● High-speed, trouble-free operation assured by simplicity of design, sound engineering, precision unit-construction of all sub-assemblies. Wide operating range, new refinements, increase production up to 20%
● Versatile! Handles synthetics, worsteds, zephyr, cashmere yarns, etc. Stitch construction includes interlock, rib, jersey which can be incorporated with tuck and welt stitches and (on interlock fabric) fancy stitches embodying stripes, colored checks, blister, grenadine; also pleat effects and jersey interlock. Our big backlog of orders proves preference for OGA and OTA equipment—makes it necessary to place your orders several months ahead of wanted delivery date! Write at once!

ORDNANCE machines are available in 18", 20", 22" and 24" with 8 feeds; in 30" and 32" with 12 feeds.
To meet todays demand for JERSEY fabrics let us demonstrate our OTSA model, embodying many new exclusive features!

ORDNANCE GAUGE CO. • PHILADELPHIA 25, PA.
EXCLUSIVE SALES REPRESENTATIVE
MAC M. ROTHKOPF 317 BUSHWICK AVE. BROOKLYN, N. Y.

OTSA OGA OTA
ORDNANCE GAUGE
CIRCULAR, FULLY AUTOMATIC
KNITTING MACHINES



Elevated Tanks, Pressure Vessels, Chemical and Processing Equipment from Aluminum, Stainless and Carbon Steel, Monel and Other Alloys.

ALUMINUM TANKS FOR PEROXIDE STORAGE

• Storage and measuring tanks in aluminum or stainless steel carried in stock, or can be built to your specifications.

We invite your inquiries for tanks or vessels for handling hydrogen peroxide or other textile liquids — complete with fittings, in aluminum, stainless or carbon steel, monel or other alloys. Serving the textile industry since 1854.

Write for *Tank Talks.*

R. D. COLE MANUFACTURING CO. COLE NEWNAN, GEORGIA

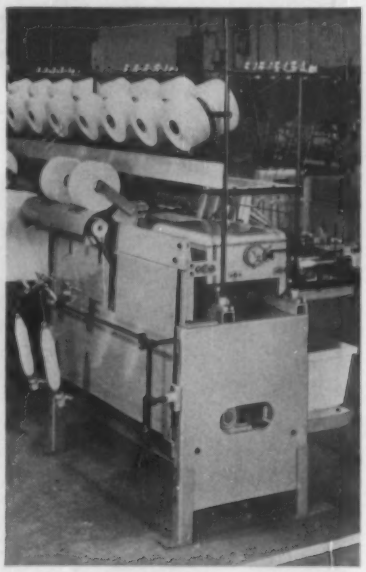
R. D. COLE MANUFACTURING CO.
NEWNAN, GEORGIA

counterweights lift the carrier to the top, where it is refilled.

The duct is approximately 36x20 ins. It can be installed from the bottom upward in 10-ft. sections.

The system requires no power.

Circle T-22 on Reader-Service Card



Spooler Quill Winder

Muschamp Textile Machinery Ltd., Bardsley, Lancs., England, has combined a high-speed spooler with an automatic quill winder. The machine is equipped to wind from 9-in.-dia. spools onto quills, but the back of the machine has been designed to incorporate a high-speed 20-spool winder to wind from ring tube or cap to produce 3-in. traverse, 9-in.-dia. spools.

An operator maintains 20 spindles of spool winding at the back of the machine, and she places them on a swiveling spindle in front of her to bring the new full spool into position and automatically return the empty spool tube to the spool winder at the back.

The speeds of the machine have been arranged so that 20 spindles of spool winder will keep 40 spindles of automatic quill winder in full production. Winding speed of the spool winder is about 800 yds. per min. and the quill winder about 400 yds. per min.

Mixed filling is reduced with the new system, and full-cone transportation is eliminated. Closer cooperation is expected between the spool winder and the quill winder to reduce stops due to bad knots or loose ends.

Foster Machinery Co., Westfield, Mass., is U. S. agent for Muschamp machines.

Circle T-23 on Reader-Service Card

There's no substitute
for proven performance—

INSIST ON

SKF-Equipped Spindles

When you specify SKF Roller Bearing Spindles — and refuse substitutes — you get the best that money can buy.

More than 40 million SKF-equipped spindles have been put into service during the 30 years that have elapsed since SKF introduced the first anti-friction spindle bearing in 1926. The vast majority are still on the job today.

In recent months, our bolster manufacturing capacity has been increased substantially to better meet your requirements. And as always, SKF works closely with spindle manufacturers in servicing spindles after installation.

Yes, you get full value for your dollar when you

Specify — And Insist On —
SKF Roller Bearing Spindles

7719

SKF®

TEXTILE BEARING SPECIALTIES

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.
—manufacturers of SKF and HESS-BRIGHT® bearings.

SUBSIDIARY
TYSON BEARING CORPORATION, MASSILLON, OHIO
—manufacturers of Tyson tapered roller bearings.

For more data, write this page number on Reader-Service card. →

Small Size—
Big Capacity
Universal Steam Trap

Exceptional Capacity

This small, light-weight, inexpensive bucket type Unitrap* has a discharge capacity of 1000 lbs. per hour at 125 lbs. pressure. This is more than adequate for most textile mill applications, such as slashers, dry cans, calenders, printing and coating machines. It assures fast warm up.

Completely Universal

Like larger Unitrap Models the ½" size Model 70T, shown here, operates on a balanced pressure principle through the unique function of its new and exclusive Dual-Valve, which automatically compensates for differential pressures through a range of 0 to 125 lbs. PSI. It adjusts to changes in steam pressures and condensate rates without requiring changes or adjustments of orifice or valve.

Reduced Maintenance and Wear

In-line maintenance, stainless steel working parts, and automatic universal pressure range eliminate most of the usual maintenance and replacement costs. Large orifices and positive sealing of the valve reduce wear and wire drawing to a new low.

*Reg. Trade Name

Eliminates "Guess Work"

The universal range of the Unitrap line takes the "guess work" and engineering out of ordering steam traps; as well as adjusting to pressure application for peak machine efficiency.

for full information
Write for Bulletin 825W

Perfecting Service Co.
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AT YOUR SERVICE

SPECIALIZED ENGINEERING
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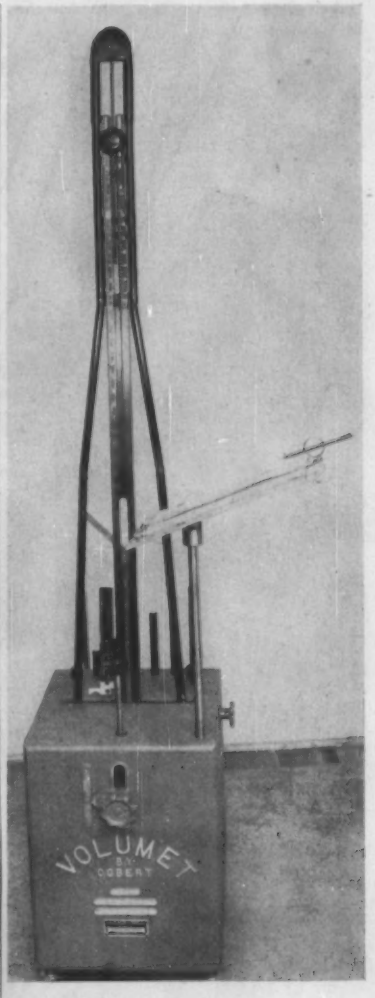
MACHINE CO., INC.
2231 E. Ontario Street
Philadelphia 34, Pa.



Hosiery-Testing Device

The Volumet hosiery-testing device, supplied by Joseph C. Cobert, Concord, N. C., is used for testing gray full-fashioned hosiery and for making volumetric measurements of finished hosiery.

The device has a telescoping, spring-pressured toe mounted on an expanding leg frame. It has three separate rules to permit the measurement of foot size, heel and over-all length, and welt dimensions in a single operation. Plain or stretch hosiery can be measured in all sizes from 8 to 11½ in any width or length.

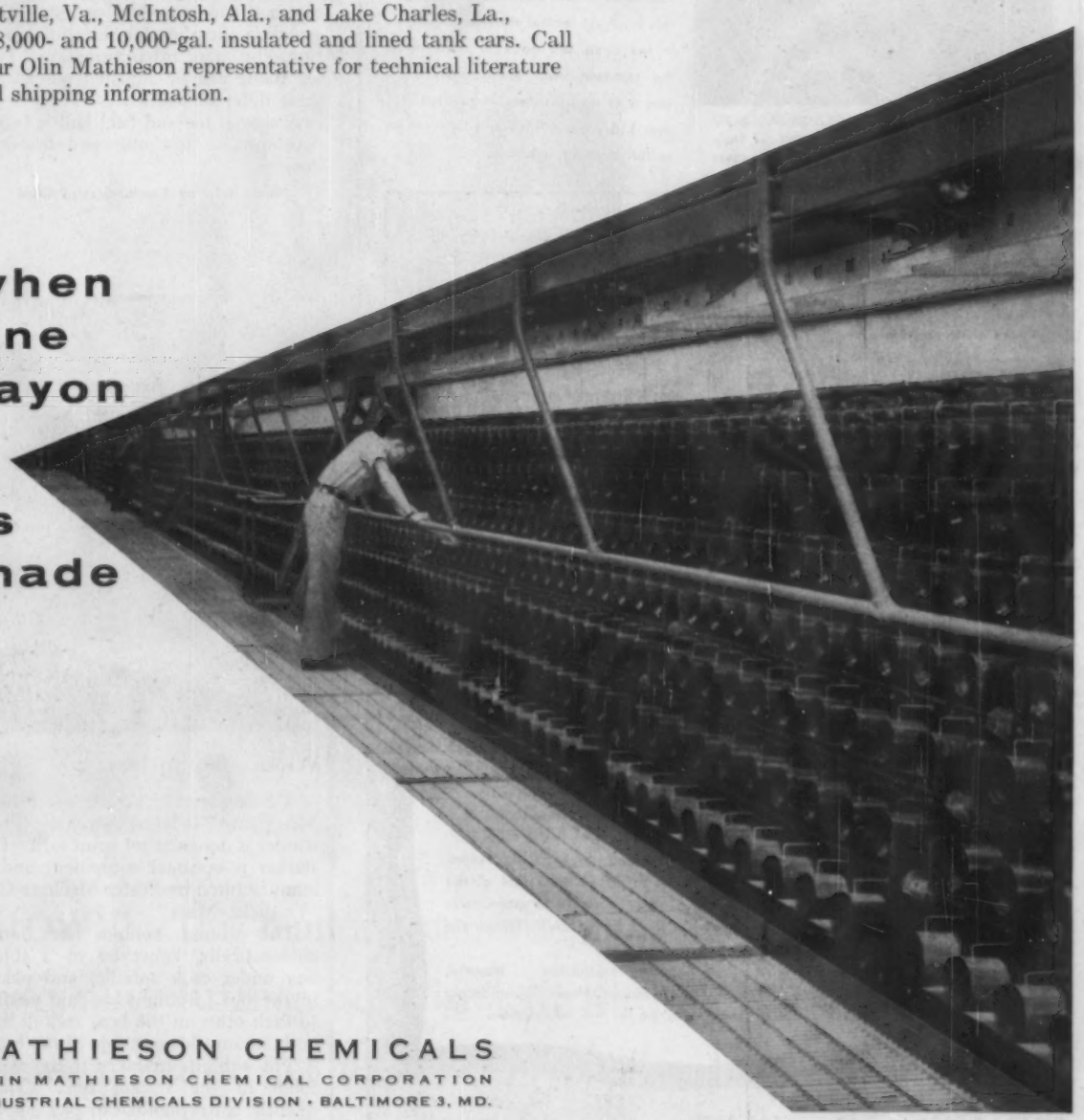
A stocking is placed on the form and pulled down at the welt until the heel panel reaches a standard length. At this point, a size-indicating rod, attached to the telescoping toe, points out the foot size on a separate scale. By a quick downward thrust of the hand knob, the leg frame is expanded to cause the stocking to find a true level of length. The over-all length is then read on the main rule. CONTINUED ON PAGE 194

Mathieson
CAUSTIC SODA
is there

Four plants from the Great Lakes to the Gulf deliver Mathieson Caustic in the quantity and quality specified, shipped on precise schedules to meet your operating requirements.

For rayon, special grades and high purity caustic are available. Caustic shipments come from Niagara Falls, N. Y., Saltville, Va., McIntosh, Ala., and Lake Charles, La., in 8,000- and 10,000-gal. insulated and lined tank cars. Call your Olin Mathieson representative for technical literature and shipping information.

when fine rayon is made



MATHIESON CHEMICALS
OLIN MATHIESON CHEMICAL CORPORATION
INDUSTRIAL CHEMICALS DIVISION • BALTIMORE 3, MD.

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MATHIESON

INORGANICS: Ammonia • Bicarbonate of Soda • Carbon Dioxide • Caustic Potash • Caustic Soda • Chlorine • Hydrazine and Derivatives • Hypochlorite Products • Muriatic Acid • Nitrate of Soda • Nitric Acid • Soda Ash • Sodium Chlorite Products • Sulphate of Alumina • Sulphur (Processed) • Sulphuric Acid

ORGANICS: Ethylene Oxide • Ethylene Glycols • Polyethylene Glycols • Glycol Ether Solvents • Ethylene Dichloride • Dichloroethylether • Formaldehyde • Methanol Sodium Methylate • Hexamine • Ethylene Diamine • Polyamines • Ethanolamines • Trichlorophenol • Surfactants

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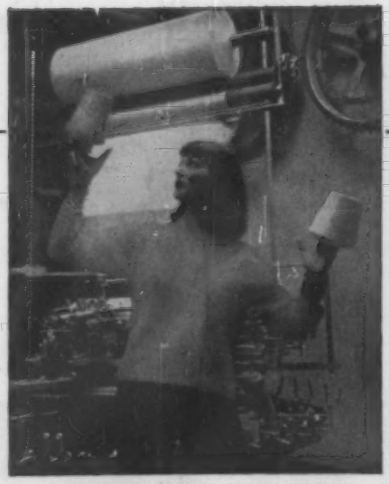


picture from plant of LUISA SPAGNOLI
Perugia, Italy
—one of our foreign users

TOMPKINS

over 110 years' proven performance—
LATCH AND SPRING NEEDLE
KNITTING MACHINES

"mostest runnin' knittin' machines in the plant!"

The Head Knitter of an U. S. mill made this brief yet factual statement. Knitters in the know are quick to substantiate the comment, with good reason. The Tompkins record stands undisputed . . . over 110 years of proven money-makers to the Knitting Industry.

We see some Tompkins machines running that are 70 years old — still going strong despite their outdated performance in comparison with new model Tompkins machines. It's like seeing an old Model T alongside a new '56 Ford! Let us help you put in a modernization plan.

— ESTABLISHED 1864 —

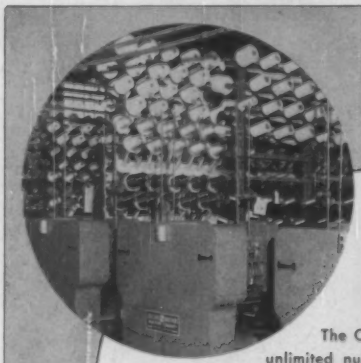
TOMPKINS BROS. CO.
623 Oneida St. • Syracuse 4, N. Y.

TOMPKINS
MODERN SPRING NEEDLE
KNITTING MACHINE

with changeable feeds to make

• Fleece Coatings • Sweat Shirts
• Jersey • Terry • Patterns
• Stripes • Lastex Inlay

—all on the same machine!



The **COLLINS C/B**
Single or Dual-Drive
Novelty Twister

is the Most Flexible Twister for NOVELTY Yarns

The Collins Novelty Twister will produce an unlimited number of novelty yarn constructions — from all types of yarns — from the finest to the coarsest counts. This twister has long been the undisputed leader in the novelty field, and such improvements as the exclusive 7-speed Ultrohead with reversing attachment, and the Dual-Drive which allows each side of the frame to be run independently of the other in regard to speed, twist direction, and yarn construction, make this Collins Novelty Twister the ideal for novelty yarn mills.

There is a Collins Twister for Every Ply Yarn Construction . . . Novelty, Ply, Big Ring, Beam, Cabling, Wet, Trap, Rayon, Paper, Glass, Single or Dual-Drive, and Special Twisters. Write for full information.

COLLINS BROTHERS MACHINE COMPANY
647 Roosevelt Ave., Pawtucket, R. I. • Charlotte • Chicago
Hugh Williams & Co., 27 Wellington St. E., Toronto 1, Canada

There is a Collins Twister for Every Ply Yarn Construction

EQUIPMENT & SUPPLY NEWS

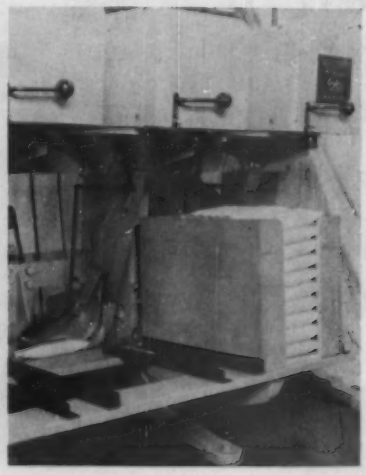
CONTINUED FROM PAGE 192

A third rule, slid up from the base into the open end of the stocking, permits measurements of the afterwelt and welt. Because the legs of the frame are always parallel in the expanded position, welt measurement of any stocking is accurate.

A stocking will measure the same regardless of the number of people who repeat the test. A set of 30 stockings can be measured and the results recorded in 11 mins. The machine is portable; and it has stocking rack and recording pedestal with a sliding member for selection, location, and standard information. The leg frame can be adjusted quickly to three different widths.

A special toe and heel ball is being developed to test unlooped seamless hosiery.

Circle T-24 on Reader-Service Card



Winder Filling Box

A filling-box stacker for the Foster-Muschamp Model-66 automatic filling winder is designed for spun yarn. The stacker is optional equipment and is manufactured by Foster Machine Co., Westfield, Mass.

The wound bobbins are doffed automatically, conveyed to a filling box under each spindle, and placed in the box. Bobbins are laid parallel to each other in the box, and all butt ends are on the same side of the box.

The bobbins are taken to the weave room in the stacker box. Consequently batteryhands can pick up the filling to plug the batteries while the filling is arranged in the correct order for easy plugging.

Circle T-25 on Reader-Service Card

CONTINUED ON PAGE 196

"HOW!"—This man is wondering how he can get needles for top-quality tufting. Silly, isn't it, when practically everybody knows one can get top-quality needles for tufting, felting, knitting *and* sewing from...**THE TORRINGTON COMPANY.**

Torrington, Conn., U. S. A. Branches in New York, Philadelphia, Boston, Chicago, Greensboro, St. Louis. Pacific Coast Representative: E. G. Paules, Los Angeles

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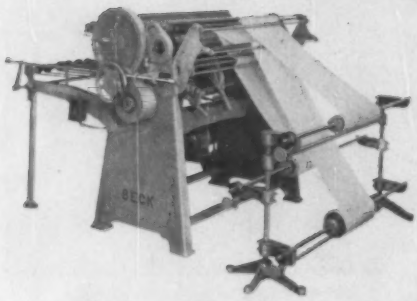
one operator

cuts 480 cloths per minute with



BECK

AUTOMATIC ROLL SHEET CUTTER

That's *speed* in any production man's language! There's no wasted time, motion or material with this versatile machine. It cuts practically any material from rolls to accurately sized sheets, piles them neatly and permits quick size changeover. Expensive? Definitely not. Let's prove this to you. A short letter will bring you details. Write.

CHARLES BECK MACHINE CORPORATION
50 CHURCH ROAD BECK KING OF PRUSSIA, PA.

Out Goes LINT · FLY TRASH from your SPINNING FRAMES and ROVING FRAMES Quickly • Economically

by using

M·B AMOSKEAG PNEUMATIC ROLL PICKER

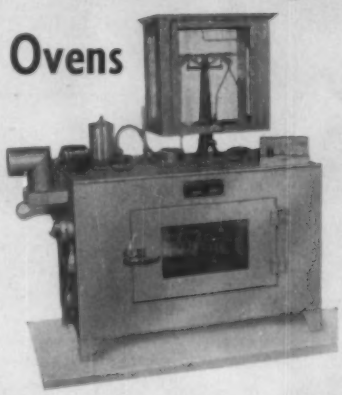
MODEL A-VT-A

A pneumatic tool especially designed for the specific purpose of REMOVING LINT and FLY from the top rolls of Spinning Frames and Roving Frames. Saves time and does a better job by substituting mechanical cleaning instead of laborious hand methods. Air deflector prevents fly and lint being blown into yarn when spinning. Adjustable valve permits any desired spindle speed.

Write for Literature

M·B PRODUCTS
46 VICTOR AVE., Div. 16
DETROIT 3, MICHIGAN

Textile Testing Ovens



EMERSON OVENS

For accurate testing of water content in yarn, small wool samples and other textile material. The 8 Basket Oven, shown above, can be furnished with 8 baskets 3" sq. x 6" deep or 6 baskets 4½" sq. x 6" deep, complete with weighing balances, sensitive to 3 mg., weights, and automatic temperature control. Table space 20" x 40".

Details of other style Ovens with specially designed baskets to handle YOUR TESTING PROBLEM on request.

EMERSON APPARATUS CO.
177 Tremont St. Melrose 76, Mass.

CONTINUED FROM PAGE 194

Stroboscope Unit

Berkshire Laboratories, 912 Bank Village, Greenville, N. H., announces its Model 18-A Berkshire Labstrobe stroboscope. This inexpensive stroboscope can be connected to an ordinary 60-cycle power line and is useful for determining speeds of rotation of motors, machines, turntables, etc.

Circle T-37 on Reader-Service Card

Ten-Ton Lift Truck

A ten-ton-capacity lift truck at 24-in. load centers has been announced by Hyster Co., 2902 N. E. Clackamas St., Portland, Ore. The truck has a gasoline motor and travels at 20 mph. forward or backward.

Circle T-26 on Reader-Service Card

Paint To Protect Metal

A metal-protective paint containing 100%-zinc dust and possessing rust-inhibitive properties similar to those of the zinc coating on galvanized steel is available from New Jersey Zinc Co., 160 Front St., New York 7, N. Y.

Circle T-27 on Reader-Service Card

Steam Cleaner

A steam-jet cleaner that cleans with dry steam is being manufactured by Pantex Mfg. Co., 521 Roosevelt Ave., Central Falls, R. I. The cleaner results in a minimum of moisture, and there's no flooding of working areas. The machine is self-contained and portable so that it can be used to clean in production departments of a plant.

Circle T-28 on Reader-Service Card

Locks for Lamp Tubes

Locks for tubes in all standard fluorescent lighting fixtures have been announced by Laduby Co., Inc., P. O. Box 88, Branford, Conn. The locks are easy to install and protect against falling lamps, personal injury, and material spoilage. And because vibration is reduced with the locks, lamp efficiency is increased.

Circle T-29 on Reader-Service Card

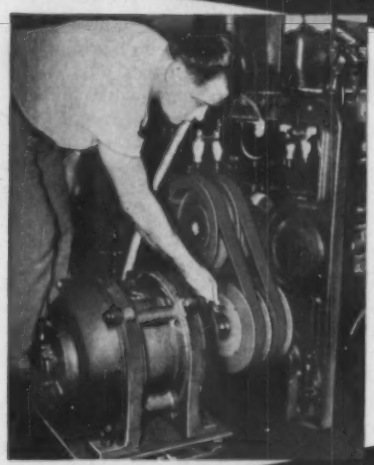
Fluorocarbon Plastic Liner

A fluorocarbon plastic laminate of Kel-F plastic on glass cloth has been marketed by the M. W. Kellogg Co.,

CONTINUED TO PAGE 200

Now--

Pre-set the Pitch Diameter



COMPONENTS OF
DODGE SPINNING FRAME DRIVE

- Variable Sheave with Automatic Pitch Diameter Gage
- Taper-Lock Companion Sheave
- Slide Motor Base
- Dodge Sealed-Life Belts

No more "cut and try" with the new Dodge Variable Sheave

An automatic Pitch Diameter Gage, graduated in tenths of an inch, is mounted on the outside flange of the new Dodge Variable Sheave. A spiral line on the hub intersects with the gage dial as the flanges are moved in or out. Pitch diameter is read directly on the dial.

Quickly . . . accurately . . . easily . . . you get the pitch diameter you want with a one point adjustment. The variable sheave locks as a unit when tightened on the shaft, utilizing the Taper-Lock principle.

Single or double strand drive

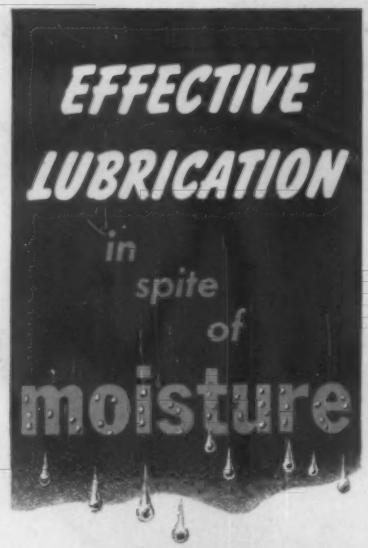
The Dodge Variable Sheave is available for both single or double strand drives — utilizing R-Section Sealed-Life V-Belts in the single or double strand and W-Section in the single strand only. The new, higher ratings of these belts, which contribute to the larger load carrying capacity of the Dodge Variable Speed Drive, open new opportunities for drive economy — both in initial cost and in maintenance. All components — the new sheave, companion sheaves, belts and motor base — are available from stock. Write for full details.

DODGE MANUFACTURING CORPORATION, 1400 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.

Call the Transmissioneer, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable assistance on new cost-saving methods. Look for his name under "Power Transmission Equipment" in your classified phone book.

For more data, write this page number on Reader-Service card. →



LUBRIPLATE 130-AA

affords machine parts and bearings real protection against rust and corrosion. It is a grease type lubricant that possesses the utmost in water and acid resistance. It has exceedingly high film strength. Due to the marked adhesiveness and water resistance of LUBRIPLATE 130-AA, it does not wash off readily, hence is the ideal lubricant in the presence of moisture.

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE

For nearest LUBRIPLATE distributor see Classified Telephone Directory. Write for free "LUBRIPLATE DATA BOOK"... a valuable treatise on lubrication. LUBRIPLATE DIVISION, Fiske Brothers Refining Company, Newark 5, N. J. or Toledo 5, Ohio.

MILL MAINTENANCE

Check Up on Your System for Best Materials Handling

Better materials handling offers you your biggest opportunity to cut production cost and to increase productivity.

Whether you want to be or not, you're in the handling business.

A given plant may be spending as much as 40% of its payroll for something that adds nothing to the value of its products. Specific instances have shown more than 60% of labor cost in production going for handling.

Cost Can Be Cut 25%

Industry, in general, could cut its handling cost 25%. But there are other ways industry benefits from increased use of materials handling equipment. Here are a few:

1. **Steady flow of production.** Good handling combined with good layout and work simplification mean that costly stop-and-go production is superseded by steady flow of parts and materials. This replacement eliminates bottlenecks, assures steady employment, and simplifies the job of planning production.

2. **Shorter manufacturing cycles.** Better handling keeps materials on the move; often they are worked on as they move. With fewer stops, there is important reduction in elapsed time from the receiving dock to the shipping platform.

3. **Smaller inventories.** With better handling, less time is taken to make the product, which means lower in-process inventories. There are smaller banks of material ahead of operators. In addition, smaller stocks of raw materials and parts are purchased.

4. **Quicker deliveries.** The more-accurate scheduling that goes with better handling makes it possible to keep delivery promises—and often delivery promises can be beaten. The customer who gets good delivery comes back for more.

5. **Better utilization of space.** When it is necessary to step up production, good layout and good handling help. Instances in many plants show that production has been increased 50%, and sometimes doubled, in the same area.

6. **Better working conditions.** If other advantages are equal, good workers select the plants where working conditions are good.

Good handling contributes to good working conditions by minimizing fatigue. And the worker who is not tired turns out more work. The results are greater productivity and lower cost.

Also, when a good handling job is done, the plant is safer to work in. Often it's a cleaner plant.

What Should You Do?

In thinking of improving materials handling in your mill, you should ask yourself three questions:

1. How can I figure what my present handling is costing?

2. How can I figure what part of this cost can be saved?

3. How can I figure what handling equipment to buy?

There are several ways you can prepare yourself to answer the three questions. One good way is to call in a consultant. He has already faced problems like yours.

But if you have to do the job yourself, there are three ways to go about it:

1. You can tackle the problem cold. You can try to solve it by using textbook principles, by ingenuity, by brute force, or by sheer good luck. This is the hard way; few companies can afford it.

Other Mills Can Help

2. You can search for another company that has faced and solved the

Service

NEW UP-TO-THE-MINUTE RESEARCH LABORATORIES

FIELD LABORATORIES

FAST, EXPERT COUNSEL ON YOUR PROBLEMS

SEE US AT THE CONVENTION BOOTH 501

Products

- PEARL
- HOMOGIZING PEARL No. 173
- WAXY R-GUM No. 10
- WAXY FILM No. 75
- PRINTEX No. 200
- HUBCO No. 30 F.L.

...make it EASY to IMPROVE textile sizing, printing, finishing...

OK SERVICE—Top flight textile research men working with the finest of modern laboratory facilities develop better textile starches for you . . . carefully control formulae uniformity. A fleet of Hubinger planes bring OK field laboratories and expert textile technicians right to your door . . . and fast.

OK PRODUCTS—A wide range of profit proven products provide an economical means for improved sizing, printing and finishing. SPECIAL OK TEXTILE STARCHES are *tailor-made* to meet your needs.

Let **OK SERVICE** and **OK PRODUCTS** help you save time, improve quality and profit more. Contact the OK representative nearest you . . . you'll find him OK too.

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The Hubinger Company

KEOKUK, IOWA

HUBINGER — QUALITY PRODUCTS FROM CORN — 76 YEARS

For more data, write this page number on Reader-Service card. →

57

will see a lot of notions
turned upside down.
Already countless plants have
gotten the jump on '57
and tossed out some old notions
on metallic yarns.

For example, they've stopped
paying butyrate prices when
they can get gleaming ALISTRAN
viscose metallic yarns that
give them all they need—
better and at lower cost!

It takes quite a diehard to
resist the scintillating
qualities of ALISTRAN.

ALISTRAN has *no* superior in
glistening metallic beauty
. . . at any price!

ALISTRAN'S superior strength
assures running *unsupported*
automatically without fear
of breaking . . . it has twice the
strength of most metallics.

ALISTRAN, unsupported, delivers
a gain in yield of from 15-20%!

ALISTRAN insures trouble-free
quilling and can be woven on
any type loom or knitting machine.

ALISTRAN is mothproof, non-
tarnishable, won't shrink.

ALISTRAN *delivers* . . . and *we*
deliver—*immediately*—to fit your
instant requirements. Technical
service too, of course. At
your mill, office—wherever,
whenever you so request.

Turn '57 into a greater profit year.

ORder

ALISTRAN* by
MULTI-TEX
PRODUCTS CORP.
56 ELM ST., NEWARK 5,
NEW JERSEY
MARKET 3-1021

*Reg. U. S. Pat. Off.

same problem you face, and then copy that company's solution. The trouble with this way is, you'll never find exactly the same problem in another plant. Therefore you'll probably end with an inferior solution.

3. You can adopt and combine the best practices of other companies to synthesize a solution of your own problem. With a little imagination, this approach will lead you to a solution that is better than the best practices in any of the companies studied.

But companies that have faced and solved the same problem you now face, or problems like it, are hard to find. Therefore you may have to look for other sources of information.

Technical publications in your own field will help.

Organizations Are Available

And, fortunately, industry is awake to the problems. There is great national interest in materials handling.

National organizations concerned with materials handling, for instance, are the National Materials Handling Exposition and the Materials Handling Institute, a manufacturers' group that sponsors the exposition.

There is also the Materials Handling Society, an organization of users.

Other organizations include the Materials Handling Div., American Society of Mechanical Engineers, and the Materials Handling Committee, American Institute of Electrical Engineers. *Materials Handling Case Book, McGraw-Hill*

EQUIPMENT & SUPPLY NEWS

P. O. Box 469, Jersey City, N. J. The product is used as a liner for tanks, piping, or other surfaces to which it is adhesive-bonded. High corrosion resistance at low cost is claimed for the material.

Circle T-30 on Reader-Service Card

Safety Shields

Laboratory workers are offered increased protection from flying glass and liquids with shields developed by Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa. The shields are made in two sizes, 14x30 ins. and 30x30 ins. A three-sided screen, made by combining one large panel with a smaller one on each side, is offered for maximum protection. Screens are mounted on large cast-metal feet with 8-in. bearing surfaces that eliminate breakage that might occur in point-contact wing-screw supports.

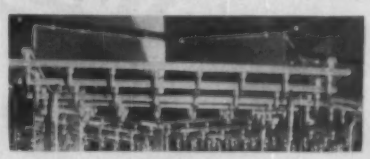
Circle T-31 on Reader-Service Card

CONTINUED FROM PAGE 196

Arc-Welding Machine

An 800-amp. arc-welder machine that may be preset from 15 to 44 arc volts is being manufactured by Air Reduction Sales Co., 60 E. 42nd St., New York 17, N. Y. When the arc is established, the voltage automatically adjusts to the present value.

Circle T-32 on Reader-Service Card



CORRECTION

In the Greenville Show report, Nov., '56, Item G-38, the photo of the Lint-Free creel and Tension-Rite bobbin holder shown by Pneumafil Corp. was upside down.

The photo is repeated correctly here.

ROUND TABLE

CONTINUED FROM PAGE 10

be supplied that allow for yarn contraction. For knitting-twist yarns, 840-yd. clocks would probably be supplied, but 890-yd. clocks should be supplied for filling or warp twist.

A check of your hank clocks may indicate a gear ratio of 19 to 45 on 1⅛-in. roll fly frames. That ratio would give 84 yds. per 1/10 hank, or 840-yd. hanks. The formula by which this calculation is made is:

$$(19 \times 45 \times 1\tfrac{1}{8} \times 3.1416) \div 36.$$

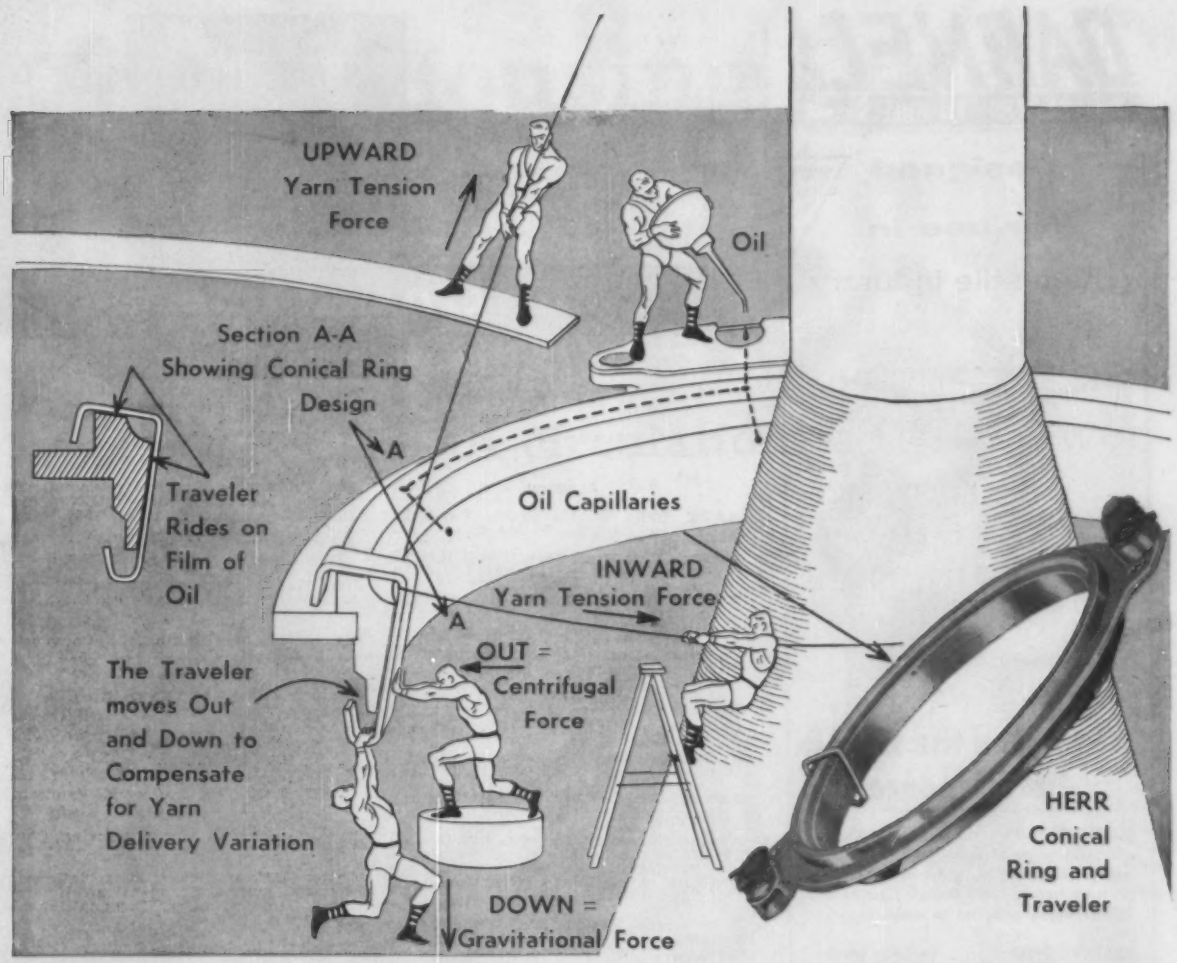
On spinning frames originally purchased to produce an average of 20s yarn at 4.00 to 4.50 twist multiplier, the gear ratio would probably be 25 to 41 or 26 to 39 and would equal about 89 yds. per 1/10 hank, or 890-yd. hands. This formula is:

$$(25 \times 41 \times 1 \times 3.1416) \div 36$$

These clocks may be stamped 1″ — 890, 1″ 25 — 41, 1″ 26 — 39, 1:1025, or 1:1014. Each of these stampings indicate 890 yds. per hank.

After frames have been sold and resold several times, the gear ratios of the clocks should be checked to be sure they are uniformly correct; otherwise production control may vary 6% or more. The pounds per frame hank with an 890-yd. clock and yarn with 6% contraction will figure 6% more than that produced on an 840-yd. clock.

J. M. Cooper
Gastonia, N. C.



HERR Conical Ring Design forces the traveler out and down, equalizing the yarn tension!

RESULTS

- Yarn breakage is prevented
- Yarn is smoother
- Heavier More Uniform Doffs
- Minimizes Wear on Ring and Traveler

Ask for help on your problem.

The Herr Conical Ring Design equalizes the yarn tension forces (upward and inward) and the Traveler centrifugal and gravitational forces (outward and downward). These opposing forces are balanced and the traveler rides on the ring with minimum frictional contact.

Reservoirs feed oil to the capillary openings. The Traveler distributes this oil to form a microscopic film on which it rides permitting maximum spindle speed with minimum Ring and Traveler wear.

If you spin or twist confer with Herr.

Please Send technical literature on Conical Rings ☐ Herr Flyers ☐

NAME ..... TITLE .....

COMPANY .....

ADDRESS .....

CITY ..... STATE .....

HERR

MANUFACTURING CO., INC.

309 FRANKLIN STREET, BUFFALO 2, NEW YORK

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Designed for use in the textile industry

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RUBBER TREADS . . . a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

RUST-PROOFED . . . by zinc plating, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

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STRING GUARDS . . . Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

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CALENDAR

January

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Jan 2.

AATCC, New York Sect., Hotel Delmonico, New York, N. Y., Jan. 23.

National Cotton Council of America, annual meeting, St. Louis, Mo., Jan. 28 & 29.

Plant Maintenance & Engineering Show, Public Auditorium, Cleveland, Ohio, Jan. 28 to 31.

February

AATT, Della Robbia Room, Vanderbilt Hotel New York, N. Y., Feb. 6.

AATCC, Midwest Sect., Hotel Bismarck, Chicago, Ill., Feb. 16.

American Society for Quality Control, Textile Div., Harrison Hightower Building, A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., Feb. 25 to 27.

International Heating & Air-Conditioning Exposition, International Amphitheater, Chicago, Ill., Feb. 25 to Mar. 1.

Cotton Reasearch Clinic, National Cotton Council of America, General Oglethorpe Hotel, Savannah, Ga., Feb. 27 to March 1.

March

AATCC, New York Sect., Hotel Delmonico, New York, N. Y., March 1.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., March 6.

Textile Research Institute, annual meeting, Hotel Commodore, New York N. Y., March 14 & 15.

Southern Textile Methods and Standards Association, spring meeting, Clemson House, Clemson, S. C., March 14 & 15.

Textile Quality Control Association, spring meeting, Clemson House, Clemson, S. C., March 28 & 29.

April

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., April 3.

American Cotton Manufacturers Institute, annual convention, Palm Beach Biltmore Hotel, Palm Beach, Fla., April 4 to 6, 1957.

National Packaging Conference and Exposition, sponsored by American Management Association, International Amphitheatre, Chicago, Ill., April 8 to 11.

Alabama Cotton Manufacturers Association, 56th Anniversary Meeting, Buena Vista Hotel, Biloxi, Miss., April 10 to 12.

National Knitted Outerwear Association, annual meeting, Waldorf-Astoria, New York, N. Y., April 23 & 24.

Phi Psi Textile Fraternity, annual convention, New Bedford Hotel, New Bedford, Mass., April 25 to 27, 1957.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., April 26.

The Underwear Institute, annual meeting, Hotel Traymore, Atlantic City, N. J., April 29.

Knitting Arts Exhibition, Convention Hall, Atlantic City, N. J., April 29 to May 3.

Materials Handling Exposition, Convention Hall, Philadelphia, Pa., April 29 to May 3.

May

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., May 1.

The Fiber Society, spring meeting, Clemson House, Clemson, S. C., May 1 & 2.

Cotton Manufacturers Association of Georgia, annual convention, Emerald Beach Hotel, Nassau, Bahama Islands, May 1 to 4.

American Society for Quality Control, annual convention, Masonic Temple, Detriot, Mich., May 22 to 24.

South Carolina Textile Manufacturers Association, annual meeting, The Cloister, Sea Island, Ga., May 30 to June 1.

Tufted Textile Manufacturers Association, annual convention, Fontainebleau, Miami Beach, Fla., May 30 to June 1.

June

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., June 5.

Southern Textile Association, annual convention, Ocean Forest Hotel, Myrtle Beach, S. C., June 20 to 22.

September

Combed Yarn Spinners Association, annual meeting, The Cloister, Sea Island, Ga., Sept. 26 & 27.

Carded Yarn Association, annual meeting, The Cloister, Sea Island, Ga., Sept. 27 & 28.

October

Chemical Finishing Conference, National Cotton Council of America, Statler Hotel, Washington, D. C., Oct. 2 & 3.

Plant Layout Technical Workshop, Greater Pittsburgh Airport Hotel, Pittsburgh, Pa., Oct. 15 to 19.

National Industrial Packaging & Handling Exposition, Convention Hall, Atlantic City, N. J., October 28 to 31.

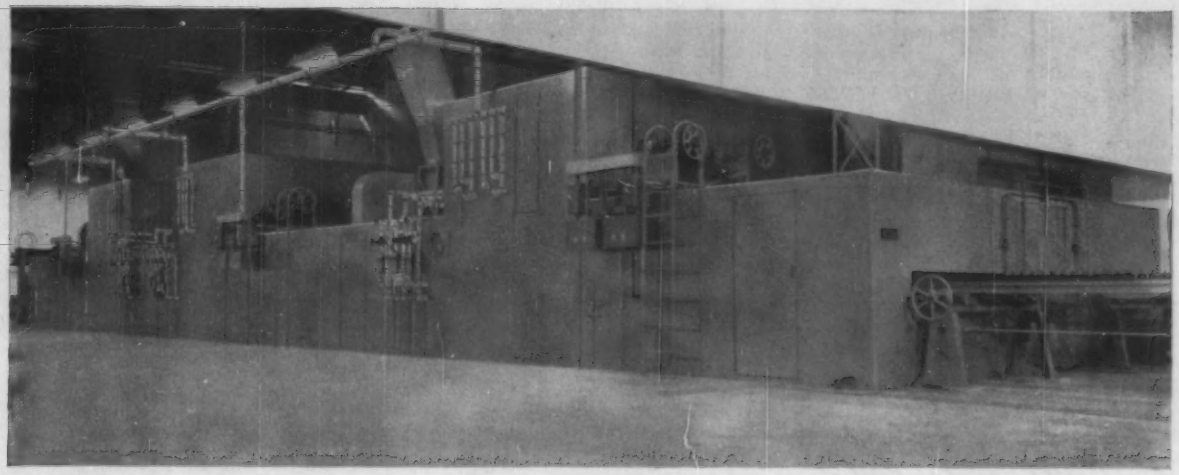
November

AATCC, national convention, Hotel Statler, Boston, Mass., Nov. 14 to 16.

Tenter Housing Output

UP 50 TO 150%!

Proctor's duplex air circulation is the answer



The reason why the Proctor Tenter Housing offers the greatest drying capacity per foot of length, lies in the careful design of Proctor's duplex air circulation system. It is the only system that gives absolute uniformity of drying or curing. User experience has actually proven output increases of up to 150% over conventional housings!

The Proctor air circulation system, with its accurate control, has another advantage too. It permits handling of the widest range of fabrics, with the assurance that each will receive exactly the correct treatment.

You cannot afford to overlook a machine that will pay for itself, out of savings, in two years, as shown in actual case histories. Ask for a Proctor engineer to go over your requirements, and judge for yourself the advantages to be gained by the use of this Tenter Housing.

PROCTOR EQUIPMENT FOR THE TEXTILE FIELD

AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR TUBULAR KNITS • EQUIPMENT FOR PRODUCING "REDMANIZED"® SHRUNK-TO-FIT FABRICS • CARPET DRYERS

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Proctor

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NEWS about SUPPLIERS

A & W MACHINE CO., Charlton City, Mass.–Has moved its office and warehouse to East Brookfield, Mass. Robert C. Boulanger has been elected president of the company. . . . **ALLIS-CHALMERS MFG. CO.**, Milwaukee, Wis.–Has opened a branch office of the Industries Group in Allentown, Pa. Ralph L. Haney is manager of the new office. . . . **ALTHOUSE CHEMICAL CO.**, Reading, Pa.–Has elected Dr. C. Scott Althouse chairman of the board. Howard F. Bjork has been elected president. . . . **AMERICAN AIR FILTER CO., INC.**, Louisville, Ky.–Has named C. A. Pickett manager of the sales department of the Product and Marketing Div. John R. McConnell has retired as vice president of the company. . . . **AMERICAN CYANAMID CO.**, New York, N. Y.–Has appointed Dr. Eugene Allen as group leader in the Dyes Research Section of the Bound Brook Laboratories, Bound Brook, N. J.

AMERICAN VISCOSE CORP., Philadelphia. Pa.–Has named William H. Lamason to head the Raw Film Production Dept., Marcus Hook, Pa. Other appointments at Marcus Hook are Robert L. Novak named to head the Products Converting Dept. and Zachariah C. Dameron, Jr., to head the Coating Dept. . . . **ARMOUR & CO.**, Chicago, Ill.–Has named Werner L. Riegler product manager of the fatty-acid sales department. . . . **CHEMSTRAND CORP.**, Decatur, Ala.–Has named Cloyce L. Purdom market-research manager of the general sales division. . . . **COSA CORP., TEXTILE DIV.**, New York, N. Y.–Has named Ralph Gosset & Co., Greenville, S. C., as sales representative. . . . **CORN PRODUCTS REFINING CO.**, New York, N. Y.–Has named C. J. McDowell, R. F. Cohee, R. D. Walter, and E. W. Beardsley as sales service representatives. . . . **DEXTER CHEMICAL CORP.**, New York, N. Y.–Has named Edward J. Baxter technical sales representative in Virginia and North Carolina. . . . **DOW CHEMICAL CO.**, Midland, Mich.–Has started commercial production of styrene-butadiene latexes in its new plant in Pittsburgh, Calif.

EMERY INDUSTRIES, INC., Cincinnati, Ohio–Has named Albert F. Stahl and Robert Knippling to the Process Research Section. . . . **EMKAY CHEMICAL CO.**, Elizabeth, N. J.–Has named E. L. Rodgers technical sales representative in Georgia and Alabama. . . . **FOOD MACHINERY & CHEMICAL CORP., PEERLESS PUMP DIV.**, Los Angeles, Calif.–Has named Max H. Richter, Jr., and George Ries sales engineers. . . . **GOODYEAR TIRE & RUBBER CO.**, Akron, Ohio–Has started a $4,000,000 expansion program at its Niagara Falls, N. Y., plant to increase the production of Pliovic vinyl resins. . . . **HARRIS RESEARCH LABORATORIES**, Washington, D. C.–Has named Edmund M. Buras to its staff of research consultants. . . . **INDUSTRIAL RAYON CORP.**, Cleveland, Ohio –Has elected W. C. Miller treasurer. . . . **JEFFERSON CHEMICAL CO.**, Houston, Texas–Has started a major expansion program at its petrochemicals plant in Port Neches, Texas.

JOHNSON SERVICE CO., Milwaukee, Wis.–Has opened a new branch office at Fort Worth, Texas, under the super-

That Wonderful Feeling

CROMPTON RICHMOND COMPANY INCORPORATED FACTORS

The importance of available cash in a steady stream is a historical maxim. Throughout the ages a favorite quip has been, "There is nothing the matter with me that money can't cure." A modern plant, and excellent product, a dovetailed organization, and a satisfactory distribution may easily be hampered by inadequate cash – though the current assets would turn competitors green with envy. "Current assets" include the receivables which may take a month or more to liquidate – but where was that cash yesterday . . . or last week when it was most needed?

Crompton Factoring turns worrisome receivables into cash on a continuing basis . . . freeing you of any credit responsibilities and the work and cost entailed in liquidating those receivables. And the fact that Crompton's financial strength can take care of your needs at all times – that too adds to the wonderful feeling.

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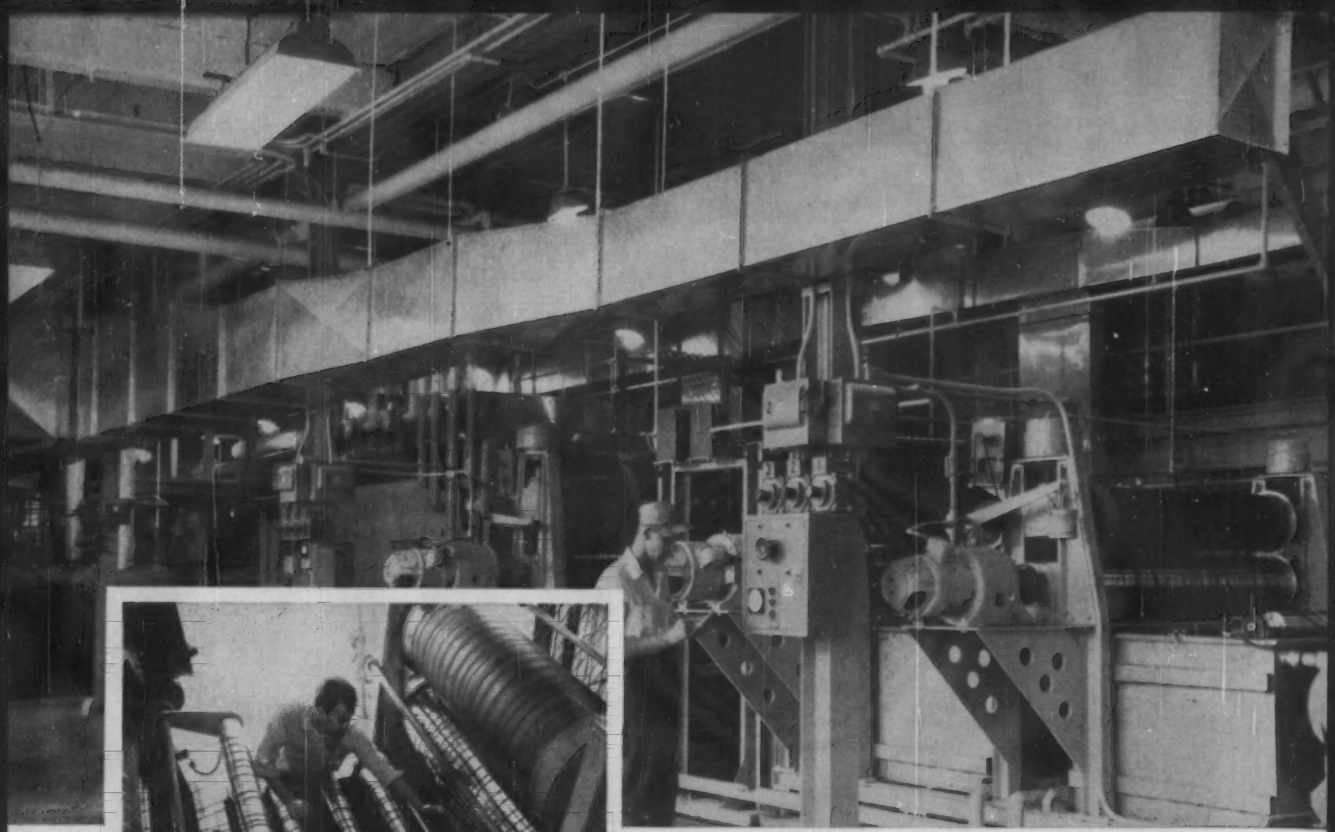
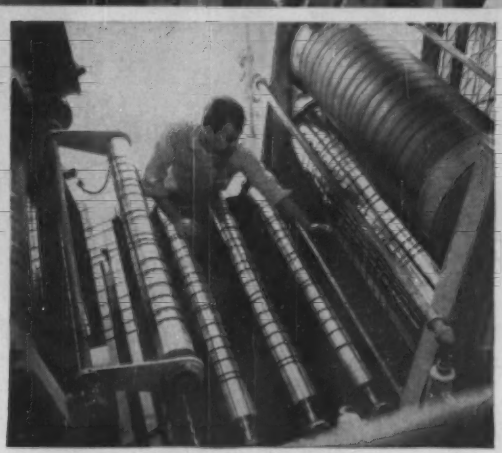
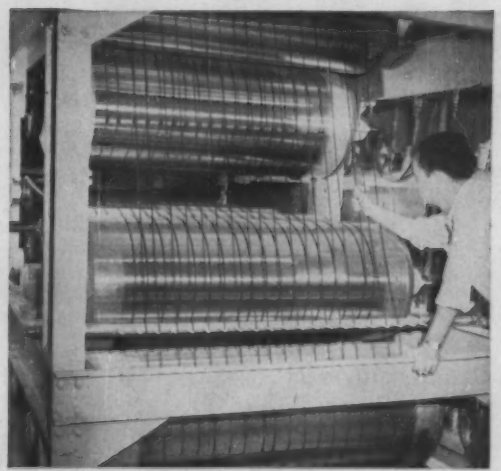
1071 Avenue of the Americas, New York 18, N. Y.
Crompton-Richmond-Joel Hurt Co.
Glenn Building, Atlanta 1, Georgia



Continuous dyer. Creel stands are out of picture at right.



In boil-out section, warp passes over 8 Stainless rollers.



36 Stainless Steel dry cans are heated by 45 psi steam.

"STAINLESS STEEL is cleaner, and it lasts longer"

SAYS LARGE SOUTHERN TEXTILE MANUFACTURER.

The plant shown here manufactures denim. In 1956, the company installed a large (20 ball warp) 100% continuous steam process for vat dyeing. There are only three other machines like it in the United States, and in all of them, Stainless Steel plays a very important role.

With the old iron kettles, dyeing was limited to one shade, because of the extreme difficulties encountered in cleaning. The new Stainless equipment can be simply flushed out and it is clean enough for the new color. The pictures tell most of the story.

Spokesmen for the company say that they intend to use Stainless Steel for all new equipment and any replacements in the older dye department. "Stainless Steel is cleaner, and it lasts longer," is the way they sum it up.

When *ordering* Stainless Steel equipment, you can be sure of service-tested quality if you specify *USS* Stainless Steel.

UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND
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USS STAINLESS STEEL

USS

SHEETS • STRIP • PLATES • BARS • BILLETS • PIPE • TUBES • WIRE • SPECIAL SECTIONS

UNITED STATES STEEL

vision of R. C. Spangenberger. James R. Gaylor has been named to head the company's other new branch office at Savannah, Ga. . . . **LEWIS-SHEPARD PRODUCTS, INC.**, Watertown, Mass.—Is offering an application engineering service aimed at reducing materials-handling costs. Marshall Dreitzler has been named sales representative in the Chicago, Ill., area. . . .

ROBERT M. TOBIN (left) has been named sales manager of the Powrworker Section, Industrial Truck Div., Clark Equipment Co., Battle Creek, Mich. E. C. SLAUGHT, Jr., (center) has been named manager of the market-development department of Heyden Chemical Corp., New York, N. Y. THOMAS F. PARKS (right) has been named assistant to the vice president and general sales manager of Chemstrand Corp., Decatur, Ala.

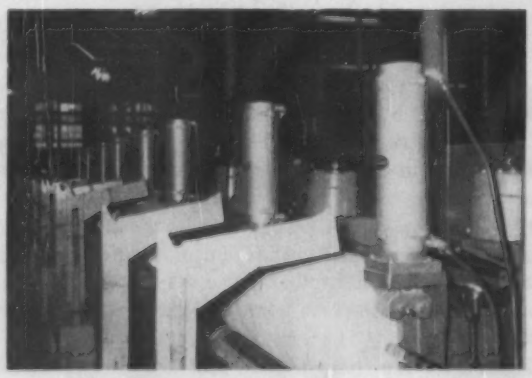
KARL LIEBERKNECHT, INC., Reading, Pa.—Has named Leroy C. Milliken president. . . . **LINK-BELT CO.**, Chicago, Ill.—Has named the following district managers: George A. Most, Jr., Boston, Mass.; J. Charles Bullock, Moline, Ill.; Gene A. Zwerner, Albany, N. Y.; C. C. Wiley, Washington, D. C.; Paul Waldorf, Baltimore, Md. . . . **MARKET FORGE CO.**, Everett, Mass.—Has sold its Materials Handling Div. to American Pulley Co., Philadelphia, Pa. Nathaniel Warshaw has joined Market Forge as manager of this division.

ROY S. FISHER (left) has been elected vice president and director of sales for National Vulcanized Fibre Co., Wilmington, Del. CECIL A. McABEE (center) has been named sales representative in the South for Product Sales, Inc., Whitman, Mass. LEE O. WITZENBURG (right) has been named vice president in charge of sales for the Cleveland Worm & Gear Co. and its affiliate, the Farval Corp., Cleveland, Ohio.

MB MFG. CO., New Haven, Conn.—Has opened a Western Field Service Office in Culver City, Calif. . . . **NATIONAL STARCH PRODUCTS**, New York, N. Y.—Has purchased

HERE'S WHY 50 MILLS HAVE INSTALLED THE *Long* PATENTS PENDING

PNEUMATIC LAP CONTROL SYSTEM FOR PICKERS



Above photo shows complete system recently installed on eight pickers in large Southern Mill.

- **QUALITY** . . . Co-efficient of variation decreased from .3 to .6 in 85% of mills replacing friction systems—60% of mills replacing pneumatic rack & pinion systems. Insures absolute control of pressure on fluted calender and stack roll calender sections. Important to mills running blends on pickers, and a necessity to mills running synthetics and long staple cotton.
- **PRODUCTION** . . . 85# to 100# laps now being made with 19½" diameters. Cuts diameter of laps 4" to 6" over conventional systems on pickers—2½" to 3" over newer deadweight systems.
- **MAINTENANCE** . . . Elimination of up to 32 gears, pinions racks, etc. reduces maintenance to absolute minimum.

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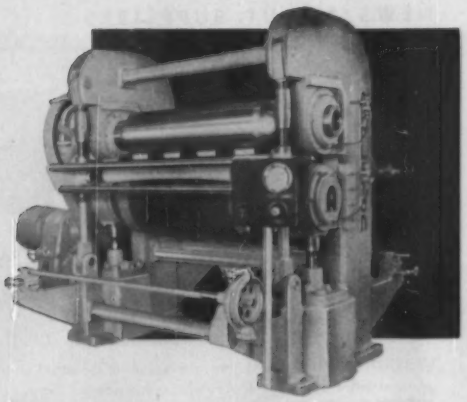
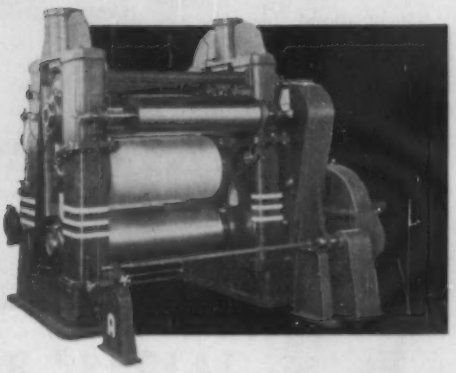
at Everglaze Finishing

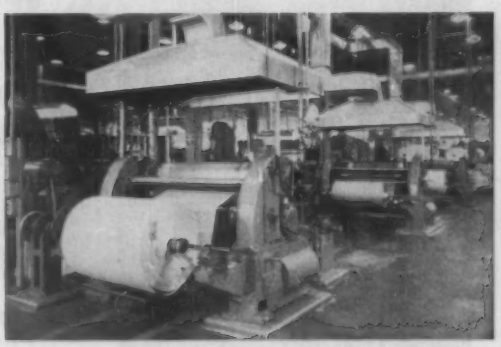
Apply increased production and less maintenance to your everglaze operation with new Appleton Machine efficiency . . . that puts you ahead of competition . . . that protects your profits now and for years to come. Here are 3 ways to do it:



1 An Appleton 2-roll, 50-ton Hydraulic Schreiner Calender gives goods a beautiful lustre at 40 yards a minute, 25% faster than most machines in use.



2 The Appleton 3-roll, 50-ton Hydraulic Friction Calender irons the finest everglaze finish at 40 yards a minute, increasing output by 25%.



3 The Appleton 20-ton Embosser imbeds the most meticulous or simplest design with equal ease and efficiency, at the standard 20 yards per minute.

ACCEPTANCE A ASSURED

Acceptance Assured: the invisible stamp of approval on every yard of everglaze finished goods that runs through modern, money-saving Appleton Machines. An Appleton man is as close to you as your telephone. Why not call 3-7361, or wire, collect at absolutely no obligation, today.

A
APPLETON MACHINE COMPANY
APPLETON WISCONSIN

CUSTOM-BUILDERS OF TEXTILE CALENDERS • CALENDER ROLLS OF ALL KINDS

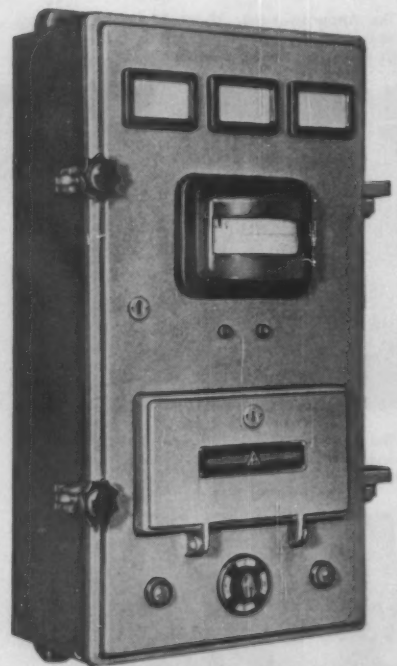
For more data, write this page number on Reader-Service card. →

HAROLD R. WING (left) has retired as a director, vice president, and general sales manager of Crompton & Knowles Corp., Worcester, Mass. JOSEPH F. MOLLOY (center) has been named general sales manager succeeding Mr. Wing. W. W. HOLMES (right) has been named general sales manager of Progressive Engineering, Inc., Rockland, Mass.

Granite Board, Inc., Goffstown, N. H. . . . **ORR & SEMBOWER, INC.**, Reading, Pa.—Has named the following sales representatives: C. R. Hutcheon, Inc., Livingston, N. J.; Harry Hoyle Contracting Co., Nyack, N. Y.; Allen Bullard Co., Little Rock, Ark. . . . **RELIANCE ELECTRIC & ENGINEERING CO.**, Cleveland, Ohio—Has opened a new distribution center in Elizabeth, N. J. . . . **J. O. ROSS ENGINEERING CORP.**, New York, N. Y.—Has acquired the business of Andrews & Goodrich, Inc., Boston, Mass. Andrews will continue to operate under its present management as a division of J. O. Ross. . . . **SKF INDUSTRIES, INC.**, Philadelphia, Pa.—Has consolidated the activities of its Boston, Mass., and Hartford, Conn., sales offices into the New England Sales District. D. H. Amidon has been named district manager with offices in Hartford. . . . **SUPREME KNITTING MACHINE CO., INC.**, New York, N. Y.—Has been authorized to build the Philip Multi-Feed Interlock machine distributed by K. J. Trading Corp., Jamaica, N. Y. . . .

UNITED STATES RUBBER CO., New York, N. Y.—Has named Walter J. Geldard marketing coordinator for the Naugatuck Chemical Div. . . . **WYANDOTTE CHEMICALS CORP., MICHIGAN ALKALI DIV.**, Wyandotte, Mich.—Has named James A. Forrest senior salesman in the Eastern District with headquarters in New York, N. Y. Thomas J. Hetherman has been named senior salesman in Chicago, Ill. . . . **YALE & TOWNE MFG. CO., YALE MATERIALS HANDLING DIV.**, Philadelphia, Pa.—Has named Clyde R. Dean, Jr., director of export sales. S. Wilson Clark has been promoted to manager of export sales. Francis J. Dunleavy has been named assistant general manager.

STEIN, HALL & CO., INC., New York, N. Y., has opened this new plant in Charlotte, N. C. Included in the building are office facilities, warehouse space, two laboratories, and a manufacturing plant.



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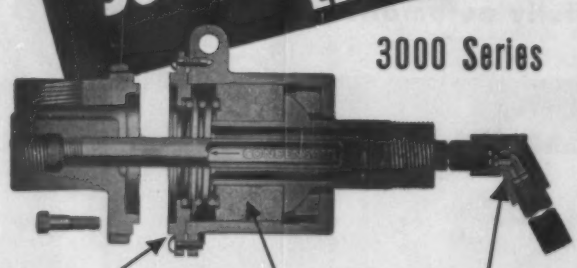

ASSEMBLY PLATE — Holds internal parts in position when head is removed.

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SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

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on this Series 3000 Johnson Joint and the syphon elbow. Remember Johnson Joints have written an unmatched service record . . . are first choice among mill men and machinery makers alike . . . and can fit all operating needs.

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NEWS about MILLS

COTTON MILLS

Bates Textile Mfg. Co., Waterloo, Que., a subsidiary of Bates Mfg. Co., Lewiston, Me., is building a $300,000 mill building.

Cone Mills Corp., Minneola Plant, Gibsonville, N. C., is converting its production from coarse colored goods to gray twills.

Montreal Cottons Ltd., Valleyfield, Que., is building a one-story plant.

J. P. Stevens & Co., Inc., New York, N. Y., has formed a new department to be known as the Cotton Fabric Development Dept. Raymond Briden and Robert Mather will head the department.

Swift Mfg. Co., Columbus, Ga., will add 36,000 sq. ft. of floor space to its plant in a two-story addition. The spinning equipment, warp-preparation department, and slashers will be moved into the new addition.

Trent Cotton Co. Ltd., Trenton, Ont., has installed new machinery at a cost of $75,000. Production is expected to be increased by 22%.

WOOLEN AND WORSTED MILLS

Firth Carpet Co., Firthcliffe, N. Y., has leased the Duplan Corp. plant in Burnsville, N. C. The plant will provide additional yarn spinning and other facilities. Operations are expected to start this spring.

Collie Woolen Mills Ltd., Appleton, Ont., has taken over the former Penmans Ltd. plant in Almonte, Ont. The building will be reconditioned, and new machinery will be installed. Production will start in the spring.

Top Co., Woonsocket, R. I., has leased the buildings formerly occupied by Sydney Worsted Co., Woonsocket. The additional space will enable the company to expand its specialty-fiber and woolen division.

SYNTHETICS MILLS

Burlington Industries, Greensboro, N. C., has purchased controlling interest in Klopman Mills, Inc., Greensboro. Klopman will continue to operate as an independent unit under the direction of William Klopman, Sr.

Forest Mills, Calhoun, Ga., is building a 5,000-sq.-ft. addition to its plant. The additional space will house the inspection and shipping department.

Leon-Ferenbach, Inc., New York, N. Y., has discontinued operations at its Wilkes-Barre, Pa., plant. The company will concentrate its operations at its Johnson City, Tenn., plant.

Slater Bros., Inc., Kings

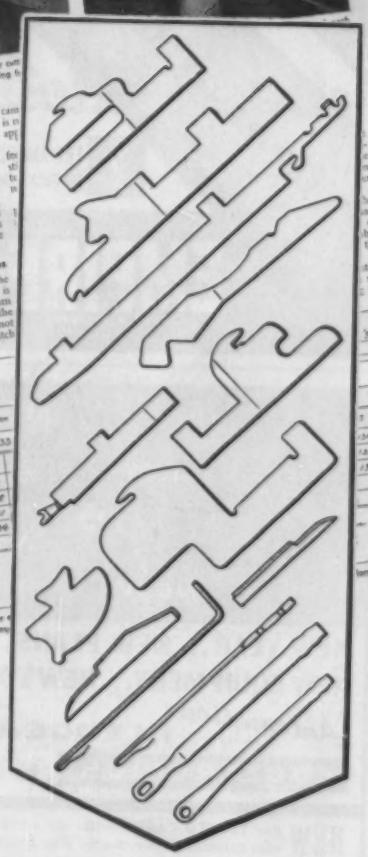
IVES

ACCURATE KNITTING PARTS MAKES ELECTRONIC CHECKING EASY...

MECHANICAL METER is used to determine the correct length of yarn knitted at No. 1 feed. The machine is run for 10 revolutions, and the stitch cam is adjusted to knit standard fabric.

ELECTRONIC METER is then applied to No. 1 feed to find the speed of the yarn. The remaining feeds are then set to No. 1 feed. The result is more even fabrics.

KNITTED FABRIC is prepared for a ravel test by cutting courses at an angle and pulling out ends starting from Time taken for a ravel test is about 15 mins.



A New Way To Set KNITTING MACHINES

• P. H. Hanes Knitting Co., Winston-Salem, N. C., is setting up multifeed knitting machines to produce more-even fabrics than those produced under the old trial-and-error methods. Electronic and mechanical yarn-measuring instruments are used for the job.

By JAMES H. BLORE, Associate Editor, TEXTILE WORLD

SETTING UP circular multifeed knitting machines has always been a slow and tedious task. The biggest difficulty has been to level each stitch cam to draw an equal amount of yarn into each stitch. If cams are not set exactly level, uneven fabric is knitted.

The usual custom is to mark the cams with an oily finger and turn the machine by hand until the marks reach the yarn carrier. The process is repeated until all the marks are level with the yarn carrier.

One of the weaknesses of this system is that knitting conditions are not the same when the machine runs under power. Different results are obtained, and machines set by the most-expert fixers often produce fabrics with horizontal streaks.

Course Variation Cut to 6%

Ravel tests at P. H. Hanes Knitting Co. showed that course-length variation from 64-feed machines ranged from 14% to 30% when knitting machines were adjusted by the old hand method. New electronic and mechanical instruments that measure yarn speed and yarn length have cut this variation to less than 6%.

P. H. Hanes overhauls knitting machines at regular intervals. These intervals depend on the number of rolls of cloth produced [see TEXTILE WORLD, Dec., '53, p. 96].

Latch-needle jersey machines are overhauled when about 1,400 rolls of cloth have been produced. The fixer who overhauls the machine also adjusts the stitches.

The Hamilton yarn-measuring device is the first instrument used to level the stitches. This meter measures the length of yarn knitted during 10 revolutions of the cylinder.

The correct meter reading for each machine is posted on the yarn-stand uprights of each machine. This reading depends on the quality of the fabric and is calculated from ravel tests.

The fixer tests No. 1 feed and adjusts this feed until the feed draws the correct amount of yarn. The Hamilton meter is placed on the bed plate of the knitting machine, and the yarn is run over the measuring wheels.

The machine is run for 10 revolutions, and the meter reading is checked. If the reading is low compared with the master reading, the stitch cam is lowered to pull more yarn into the stitch. If the reading is high, the stitch cam is raised. This procedure is repeated until the meter reading coincides with the master reading.

The Speedotex electronic instrument [see TEXTILE WORLD, July, '56, p. 132], which measures the speed of the yarn, is then used on this feed. The stroboscopic measuring unit of the instrument is held in the fixer's left hand while the calibrating unit is carried on a strap hung around the neck or over the shoulder.

An extension cord from the calibrating unit is plugged into the 110-v outlet that serves the electric stop motions. The measuring unit is held over the yarn carrier, and the yarn from No. 1 feed is run over the tension wheel and over the measuring wheel.

The machine is started, and the yarn rotates the wheel. The calibrating unit is adjusted until a flashing lamp behind the pulley synchronizes with the pulley rotation and makes the hole in the wheel appear to be stationary.

Cams Moved While Machine Runs

Without further adjustment to the calibration, the measuring unit is moved to Feed No. 2, and the yarn from this feed is looped around the wheel. If the flashing lamp does not synchronize with the wheel, the stitch

Fabric Type	Cyl. Size (Gauge or Cut)	Dials
FK 72.5"	18 (inch) 46 (cm)	153
	1	2
	133	132
	136	136
	136	136
	133	135

RAVEL TEST CHART is made for each figure is divided into the average

Accurate machine adjustments are more vital than ever when producing fine streak-free fabric. Precision IVES parts are the logical choice when you check machine settings electronically, (TW, Oct. 1956, pages 100-101). The superiority of IVES expertly designed extra durable vanadium steel knitting parts is a result of more than 84 years in-the-mill on-the-job testing. Let Ives help you lower costs and produce finer fabric with knitting parts that meet today's rigid machine and yarn requirements.

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Mountain, N. C., is building a second addition to its plant. The new addition will contain 21,440 sq. ft. of floor space.

KNITTING MILLS

Bangor Mills, Inc., Pen Argyl, Pa., will build a 50,000-sq.-ft. addition for the expansion of the knitting and warping departments.

Barclay Knitwear Corp., Waterville, N. Y., is installing machinery in its newly established plant. Anthony Botter is plant manager.

Beeren Knitwear, Inc., Hickory Grove, N. C., has moved into its new plant at Clover, S. C. The new building contains 120,000 sq. ft. of floor space.

Huntley Knitting Mills, Charlotte, N. C., has been formed as a division of Huntley Hosiery Co. The new unit will manufacture women's full-fashioned sweaters.

Redwood City Knitting Mills, Redwood City, Calif., has purchased a one-story building and modernized its plant layout.

Shamrock Knitting Mills, Marietta, Ga., has completed a 7,000-sq.-ft. addition. The dye plant and boarding room are located in the addition.

Spencer Mfg. Co., Spencer, W. Va., will build a $100,000 addition.

Wexler Knitting Mills, Philadelphia, Pa., has moved to a new location at 22nd and Arch Sts.

DYEING AND FINISHING PLANTS

Cranston Print Works, Cranston, R. I., will build an addition to its plant at a cost of $2,000.

Fruit of the Loom, Inc., Pontiac Finishing Plant, Pontiac, R. I., has installed the Bradley system of heat recovery.

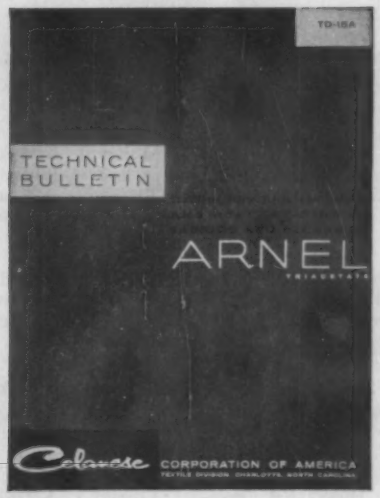
NEWS about MEN

Willie L. Adams has been named shift overseer of preparation at Aragon Mills, Aragon, Ga.

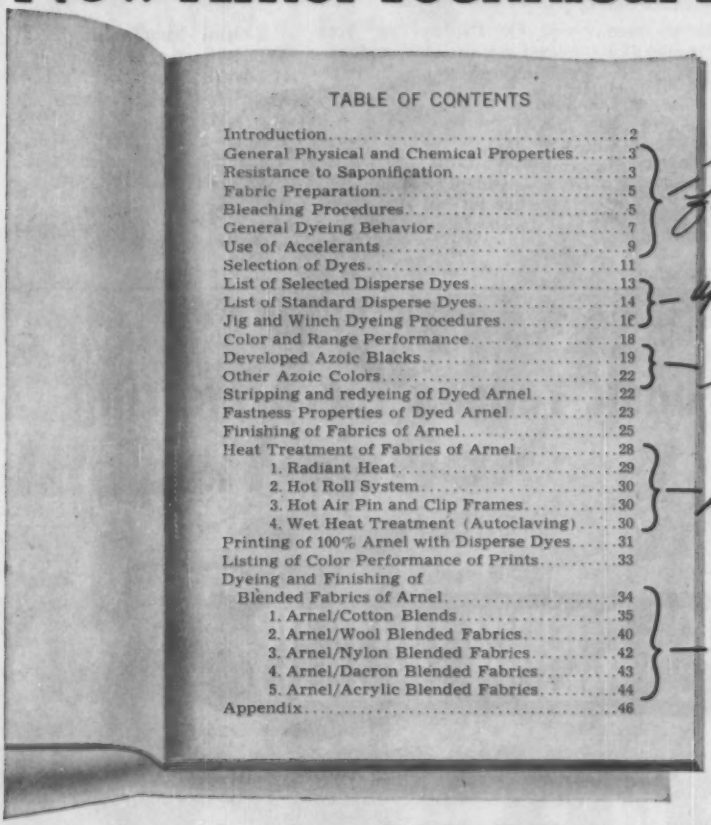
James M. Bailey has been named general manager of Gerrish-Milliken Mill, Pendleton, S. C. He will continue as vice president of Judson Mills, Greenville, where he will maintain his office.

G. P. Barnwell has been named senior vice president of Bibb Mfg. Co., Macon, Ga.

Phillip Byfield has been named superintendent of Cowan Mill, Lewiston, Me.



New Arnel Technical Bulletin Ready!



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ARNEL TRIACETATE A Celanese CONTEMPORARY FIBER

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James G. Clifford has been elected manager of the knitting mills of William Heller, Inc., Woonsocket, R. I.

Gordon Coles has been elected a vice president in charge of finishing operations at Reeves Bros., Inc., New York, N. Y.

Hugh M. Comer has been promoted to vice president and controller at Bibb Mfg. Co., Macon, Ga.

Edward Donovan has been named overseer of weaving at Arms Textile Mfg. Co., Manchester, N. H.

Richard M. Dorian has been elected to serve as director of engineering and research at A. & M. Karagheusian, Inc., New York, N. Y.

Joseph V. Einstein has been named overseer of finishing at Capital City Woolen Mills, Inc., Des Moines, Iowa.

William Gimble has been named overseer of finishing at Arms Textile Mfg. Co., Manchester, N. H.

Jack L. Green has been named to the position of assistant general manager at Lyman Printing & Finishing Co., Lyman, S. C.

F. S. Hensley has been named plant engineer at Lyman Printing & Finishing Co., Lyman, S. C.

Walter Hicks has been named overseer of dyeing at North Berwick Co., North Berwick, Me.

Paul A. Hopkins has been promoted to shift overseer of spinning at Aragon Mills, Aragon, Ga.

Harmon Juster has been named general manager of Westwood Knitting Mills, Inc., Los Angeles, Calif.

Walter J. Keeter, Jr., has been named general overseer of the carding and padding department at Aragon Mills, Aragon, Ga.

Allen G. Kneeland has been named overseer of wet finishing at Munsingwear, Inc., Minneapolis, Minn.

Matthew S. Korol has been named plant manager of the Edwards Div., Bates Mfg. Co., Augusta, Me.

Edward P. Krebs has been named general manager of Abbot Worsted Co., Seneca, S. C.

J. O. Lindsay has been named vice president and general manager at Lyman Printing & Finishing Co., Lyman, S. C.

Merrill Little has been named assistant to Joseph Merten, director of gray-goods quality control at Amerotron Corp., New York, N. Y.

Edmon G. Luke has been elected president of Amerotron Corp., New York, N. Y.

Sam Lynn has been named master mechanic at Lyman Printing & Finishing Co., Lyman, S. C.

Oliver L. Mason, Sr., has been named shift overseer of carding at Aragon Mills, Aragon, Ga.

John Mercellis has been named overseer of carding at Malden Spinning & Dyeing Co., Malden, Mass.

Richard Merrill has been named overseer of carding at Hayward-Schuster Woolen Mills, East Douglas, Mass.

Henry L. Morgan has been named plant superintendent at James Lees & Sons Co., Bridgeport, Pa.

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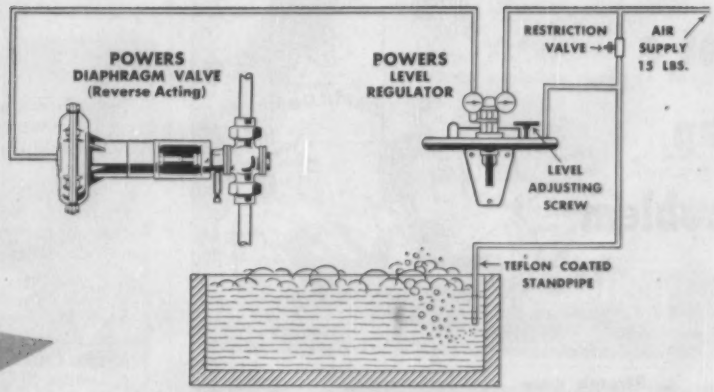

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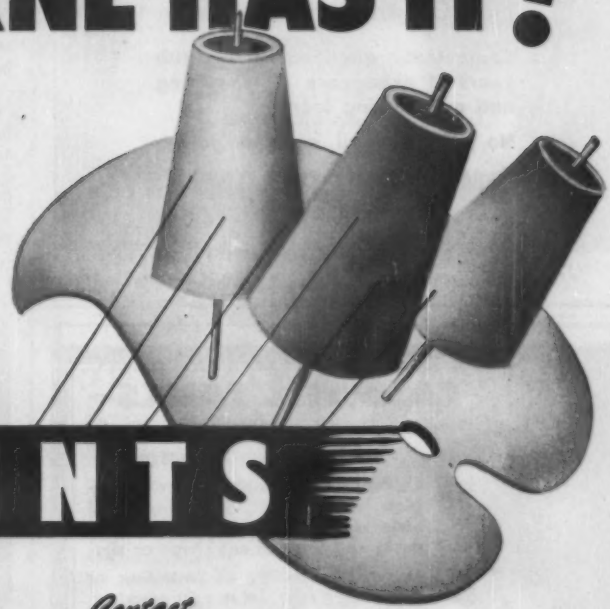

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NEWS ABOUT MEN Continued

port, Pa.

John Nedrosick has been named overseer of dyeing at Wallisford Mills, Inc., Keene, N. H.

Harry E. New has been named superintendent of Virginia Woolen Co., Winchester, Va.

Fred H. Parris has been named general superintendent at Lyman Printing & Finishing Co., Lyman, S. C.

George E. Paules has been appointed director of manufacturing at A. & M. Karagheusian, Inc., New York, N. Y.

George Piacitelli has been named vice president in charge of printing, dyeing, and finishing at Normandy Print Works, New Bedford, Mass.

George Pinkney has been named overseer of the spinning department at Cosmos Imperial Mills Ltd., Yarmouth, N. S.

Louis Rioles has been appointed a vice president of Crown Yarn Dye Co., Pawtucket, R. I.

Herman W. Schoelzel has been named overseer of dyeing at Dorr Woolen Co., Guild, N. H.

Garland G. Simmons has been appointed general manager of Laurens Mills, Laurens, S. C. He will continue as treasurer and director of Drayton Mills, Spartanburg, where he will maintain his office.

ELLIS LEACH has been elected president of Collins & Aikman Corp., New York, N. Y.

Roger Smith has been named superintendent of Paton Mfg. Co., Sherbrooke, Que.

William E. Smith has been named general superintendent at Hadley-Peoples Mfg. Co., Siler City, N. C.

William Stanley has been named overseer of carding at Slingsby Mfg. Co., Brantford, Ont.

Joseph A. Stein has been named manager of Joy Throwing Co., Hartsville, S. C.

J. D. Talbert has been named superintendent of Neely Mills, York, S. C.

R. C. Thatcher, Jr., has been

WILLIAM K. WILDER (left) has been appointed assistant to S. A. Steere, vice president of the Textile Mills Div. of Goodyear Tire & Rubber Co., Decatur, Ala. RAYMOND R. THOMAS (right) has been named acting superintendent of the company's Decatur, Ala., mill.

OLIVER B. BECKWITH has been appointed quality-control director at William Carter Co., Needham Heights, Mass.

ROBERT L. MACKENZIE has been elected controller of Bigelow-Sanford Carpet Co., Inc., New York, N. Y.

elected a vice president of Standard-Coosa-Thatcher Co., Chattanooga, Tenn.

Shelton Thomas has been named general manager of Guilford Mills, Inc., Greensboro, N. C.

Gerald S. Tompkins, Jr., has been promoted to general overseer of carding at J. P. Stevens & Co., Inc., Monaghan Plant, Greenville, S. C.

Elbert Tripp has been named technical superintendent at Virginia Woolen Co., Winchester, Va.

Henry W. Thorp has been elected a director of Dominion Textile Co. Ltd., Montreal, Que.

Forrest E. Tuggman has been elected president of United Hosiery Mills Corp., Chattanooga, Tenn.

Henry Weingarten has been named production manager at Westwood Knitting Mills, Inc., Los Angeles, Calif.

Charles L. Zimmerman has been appointed assistant director of research at Dan River Mills, Danville, Va.

OBITUARY

Frederick N. Anderson, 57, superintendent of the power house at Courtaulds Canada Ltd., Cornwall, Ont.

E. R. Callaway, Sr., 78, retired treasurer and vice president of Callaway Mills, LaGrange, Ga.

Frederick E. Cogswell, 73, foreman at Sayles Finishing Plants, Saylesville, R. I.

Brenton M. Edgar, 60, president of Brenton Textiles, Inc., Statesville, N. C.

John C. Hunt, 66, retired foreman at Leon Ferenbach, Inc., Wilkes Barre, Pa.

William H. McDowell, 73, retired vice president of Halifax County Hosiery Mills, Scotland Neck, N. Y.

Hodge A. Newell, manager and treasurer of Acca Hosiery Mills, Henderson, N. C.

Emmett F. Pritchard, 51, superintendent of Asheboro Hosiery Mills, Inc., Asheboro, N. C.

Martin Saligman, 45, vice president of Queen Knitting Mills, Philadelphia, Pa.

T. C. Turner, 62, secretary-treasurer of Phoenix Hosiery Co., Milwaukee, Wis.

slats • picker teeth • lags
plain or pinned.
PLAIN AND SPIKED FEED BOX
aprons
pins • rolls cylinders • tenter plates
plain or pinned.
GARNETT AND FLOOR CONVEYOR APRONS
ENGINEERING AND CONSULTING SERVICES On PICKING AND COARSE CARDING APPLICATIONS
ROBERT A. MAIN & SONS, INC.
Manufacturers
268 PASCACK ROAD PARAMUS NEW JERSEY

The Kuljian Corporation
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SERVES THE RAYON AND TEXTILE INDUSTRY
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Specializing in Textiles for over 40 Years
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GREENVILLE, S. C. Dial 2-3868
FALL RIVER, MASS. Dial OSborne 6-8261

JIFFY TEXTILE MARKER
For use on rayon, cotton and woolen material. Dye-resistant and boil-proof, permanent, inexpensive, quick and easy to use.
For information address
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406 W. School Lane
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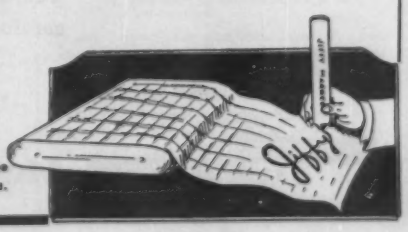

For more data, write this page number on Reader-Service card. → 217

How to keep informed on the "with what" part of your business

AT YOUR FINGER TIPS, issue after issue, is one of your richest veins of job information – advertising. You might call it the "with what" type – which dovetails the "how" of the editorial pages. Easy to read, talking your language, geared specifically to the betterment of your business, this is the kind of practical data which may well help you do a job quicker, better – save your company money.

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McGRAW-HILL FOR BUSINESS

McGRAW-HILL PUBLICATIONS

EMPLOYMENT OPPORTUNITIES

The Advertisements in this section include all employment opportunities — executive, management, technical, selling, office, skilled, manual, etc.

Positions Vacant
Positions Wanted
Part Time Work

Civil Service Opportunities
Selling Opportunities Wanted
Selling Opportunities Offered

Employment Agencies
Employment Services
Labor Bureaus

DISPLAYED —RATES— **UNDISPLAYED**

The advertising rate is $17.00 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

An advertising inch is measured ⅞" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

$1.50 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.
Position Wanted—½ the above rate.
Box Numbers—counts as 1 line.
Discount of 10% if full payment is made in advance for 4 consecutive insertions.
Not subject to Agency Commission.

Send NEW ADS or Inquiries to Classified Division TEXTILE WORLD, P. O. Box 12, N. Y. 36, N. Y. for February issue closing January 11th

Are you a young Synthetic Dyeing and Finishing Asst. Superintendent who wants "opportunity"?

Position available in large American textile company in one of their Latin American mills, for a man with approximately the following qualifications.

A. Textile School or College Graduate.
B. Ten years practical experience in an efficient American synthetic dyeing and finishing plant.
C. Has come up through the ranks and now is assistant superintendent (or superintendent) but is not satisfied—not getting ahead fast enough.
D. Thirty-five years of age or younger.
E. Realizes the opportunities that exist for greater earnings, less income taxes and quicker advancement in the foreign field and who wants to go abroad.
F. Can be single or married but if married his wife must be able to adjust to foreign surroundings.

If you have these qualifications—a good starting salary, a wonderful opportunity and a permanent job (with liberal pension benefits) is available.

Write giving full descriptions. Strictest confidence assured.

P-3658, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CHIEF ENGINEER

Graduate Mechanical Engineer with at least 10 years' experience in Rayon Industry, preferably in staple, to take charge of Engineering Department. Scope of position covers maintenance, power, design and construction. Administrative ability required.

Please send full resume and salary requirements to:

HARTFORD RAYON COMPANY
Rocky Hill Connecticut

BUYER of AUTOMOTIVE FABRICS

New car division of Ford Motor Company has challenging opportunity for experienced textile man interested in a career in the automobile industry. Will be responsible for the procurement of interior fabrics for the new car line. Should be graduate of textile school, thoroughly experienced in textile industry, and be capable of dealing effectively with suppliers and other company management personnel. Must be willing to relocate in Detroit area. Please send complete resume and indicate approximate salary requirement.

FORD MOTOR COMPANY Edsel Division
P. O. Box 637, Dearborn, Michigan

CONFIDENTIAL EMPLOYMENT SERVICE

For textile mills seeking new personnel and mill executives seeking new positions.
WE INVITE YOUR INQUIRIES
CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St. Boston 8, Mass.
Telephone Liberty 2-6547
Over 55 Years In Business

REPLIES (Box No.): Address to office nearest you c/o This publication Classified Adv. Div.
NEW YORK: P. O. Box 12 (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)
LOS ANGELES: 1125 W. 6th St. (17)

POSITIONS VACANT

Spinning Section Man wanted for carded cotton yarn mill in Pee Dee Area of South Carolina. Must have high school education and previous experience as Section Man or overhauler. Must be interested in working for advancement. Age approximately 25 to 35 years. P-3387, Textile World.

Wanted: Textile Engineer, around 30, with spinning experience, preferably wool. Knowledge of carbonizing desirable but not required. For fast growing California carpet mill. Very good opportunity. Write P-3465, Textile World.

Production Superintendent—Textile Plant— Penna. Wanted—man with textile background, preferably with spinning and carding experience, who is presently filling a supervisory or assistant superintendent's position, who is willing to accept more responsibility in order to further advance. Please reply giving full educational background, past experience and enclose a recent photo. All replies held in strict confidence. Reply to Box P 3835, Textile World.

Wanted—Textile Technician—Allentown, Pa. Textile school graduate with interest in quality control to take charge of sample and quality control department in textile company (yarns, etc.). Please reply to Box P 3836, Textile World and enclose a resume with a recent photograph.

Wanted—Junior Accountant to take full charge of inventory and waste control procedure, textile plant located in Penna. Splendid opportunity for advancement. P 3837, Textile World.

POSITIONS WANTED

Career wanted, Lowell Tech. B.S. '54, Vet 25, willing, capable and ambitious young man desires opportunity in textiles with future. N. Y. area. Some textile experience. PW 3788, Textile World.

Textile Engineer extensive experience in synthetics, fabric analysis, weave designing and physical and chemical testing seeking technical development of fabrics. PW 3739, Textile World.

Textile Engineer available; seeks opportunity with manufacturer of woolen, worsted synthetic fabrics knitting yarns. Can undertake full management or superintend fabricating, finishing. Excellent salesman. Twenty years experience. Highest references. PW-3834, Textile World.

Throwster, Supt. or manager—twenty-five years experience. Quality throwing of all fibers for all trades. Knowledge of modern methods, excellent references. Willing to relocate. PW 3821, Textile World.

Are you a young Asst. Superintendent who wants "opportunity"?

Position available in large American textile company in one of their Latin American mills for a man with approximately the following qualifications:

A. Textile School or College Graduate.
B. Ten Years practical experience in an efficient American filament rayon weaving plant.
C. Has come up through the ranks and now is assistant superintendent (or superintendent) but is not satisfied—not getting ahead fast enough.
D. Thirty-five years of age or younger.
E. Realizes the opportunities that exist for greater earnings less income taxes and quicker advancement in the foreign field and who wants to go abroad.
F. Can be single or married but if married his wife must be able to adjust to foreign surroundings.

If you have these qualifications—a good starting salary, a wonderful opportunity and a permanent job (with liberal pension benefits) is available.

Write giving full descriptions. Strictest confidence assured.

P-3660, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

Are you a young head Dyer or head Finisher who wants "opportunity"?

Position available in large American textile company in one of their Latin American mills, for a man with approximately the following qualifications:

A. Textile School or College Graduate desirable but not essential.
B. Ten years practical experience in an efficient American synthetic dyeing and finishing plant.
C. Has come up through the ranks and now is head dyer or head finisher but is not satisfied—not getting ahead fast enough.
D. Thirty-five years of age or younger.
E. Realizes the opportunities that exist for greater earnings, less income taxes and quicker advancement in the foreign field and who wants to go abroad.
F. Can be single or married but if married his wife must be able to adjust to foreign surroundings.

If you have these qualifications—a good starting salary, a wonderful opportunity and a permanent job (with liberal pension benefits) is available.

Write giving full descriptions. Also include complete resume of past experience and references. Strictest confidence assured.

P-3659, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CLASSIFIED **SEARCHLIGHT SECTION** ADVERTISING

BUSINESS OPPORTUNITIES — EQUIPMENT - USED or RESALE

UNDISPLAYED RATE:

$1.50 a line, minimum 3 lines. To figure advance payment count 5 average words as a line.

PROPOSALS, $1.20 a line an insertion.

BOX NUMBERS count as one line additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED RATE:

The advertising rate is $14.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page.

EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

Send New ADVERTISEMENTS or Inquiries to Classified Adv. Div. of Textile World, P. O. Box 12, N. Y. 36, N. Y. for February issue closing January 11th

LOOMS

52—W3 CONVERTIBLE 82" WOOLEN AUTOMATIC LOOMS

Looms have friction let-off, worm take-up, 4 Bank electric Warp stop motions, pick counters, chain racks. Complete set of conversion parts included with each loom. Shuttle size 18" Long, 2⅛" Wide, 1 11/16" Deep—Bobbin size 9½" long. Motor driven by 1½" HP motors 3/60/220. Looms in excellent condition and in place as operated.

CALL ▲ WRITE ▲ WIRE

"The Machinery Dealer with 20 Years Mill Experience"

J. LAURENCE LEWIS

P. O. BOX 82 ▲ Lexington, Mass. ▲ VOlunteer 2-4545

YARN CLOSE OUT

Jute yarn—natural 8.3/2 ply jute count—8500 lbs. on jumbo cones—price 20¢ per lb. FOB Dalton, Ga.

MYLU CORPORATION
Cartersville, Ga.
Phone 1997

WANTED

(Additional Wanted Advertisement on page 224)

MATERIALS WANTED

Mfrer of chemical specialties will purchase formulations or possibly small firm making established products for textile use.

BO-3711, Textile World,
Class. Adv. Div. P.O. Box 12, N.Y. 36, N.Y.

"SPECIALIST IN THE DISMANTLING, MOVING AND ERECTING OF TEXTILE MACHINERY"

LOUIS P. COTE, INC.

317 Blucher Street, Manchester, N. H.
Telephone: NAtional 3-1533 or 4-4271

- Rigging
- Packing
- Fully Insured
- Export Crating
- Local and Interstate Moving

WANTED TO BUY

USED
Proctor & Schwartz
Camel Back Lappers

W-3813, Textile World
Class. Adv. Div. P. O. Box 12, New York 36, N. Y.

DYEING MACHINES

2—Smith Drum Rotary Dyeing Machines, 300 lb. & 200 lb., in excellent condition; and Extractors, 40", 48", 60" American Monel Open Top; also Stainless or Monel laundry type Washers, 42 x 84" & 42 x 96"; 2—Stainless Paddle Dryers, 50 lb. and 100 lb.

All equipment very reasonably priced.

WILLIAMS MACHINERY CO.

37-37 9th Street, Long Island City, New York
STillwell 6-6666

MILLER MACHINERY CO.

66 RAILROAD AVE. PATERSON, N. J.
Tel. Sh 2-5467-8

Textile Machinery and Supplies

BOUGHT AND SOLD
Warpers • Winders & Quillers • Looms

FOR RATES OR INFORMATION ABOUT CLASSIFIED ADVERTISING

Contact The McGraw-Hill Office Nearest You.

ATLANTA, 3
801 Rhodes Haverty Bldg.
WAlnut 5778
W. LANIER

BOSTON, 16
350 Park Square
HUbbard 2-7160
H. J. SWEGER

CHICAGO, 11
520 No. Michigan Ave.
MOhawk 4-5800
W. HIGGINS
J. BRENNAN

CINCINNATI, 37
1825 Yorktown Road
Swifton Village, Apt. 2
REdwood 1-3238
G. MILLER

CLEVELAND, 15
1510 Hanna Bldg.
SUperior 1-7000
W. SULLIVAN

DALLAS, 2
Adolphus Tower
Main & Akard Sts.
Riverside 7-5064
G. JONES

DETROIT, 26
856 Penobscot Bldg.
WOodward 2-1793
W. STONE

LOS ANGELES, 17
1125 W. 6th St.
MAdison 6-9351
E. SCHIRMER
D. McMILLAN

NEW YORK, 36
330 West 42 St.
LOngacre 4-3000
R. LAWLESS
S. HENRY
D. COSTER
R. HATHAWAY

PHILADELPHIA, 3
17th & Sansom St.
RIttenhouse 6-0670
E. MINGLE
H. BOZARTH

SAN FRANCISCO, 4
68 Post St.
DOuglas 2-4600
W. WOOLSTON

HOSIERY MACHINES

used and rebuilt

KNITTERS — RIBBERS — LOOPERS
CYLINDERS — DIALS — TRANSFERS
HOSIERY NEEDLES AND PARTS

JOS. BRESANI
N. W. Cor. Hancock & Somerset Streets
Phila. 33, Pa.

WE HAVE FOR SALE

1—VV 50'—56" Palmer-tenter 1941
2—Cottage Steamers—5 lb.—9'x27' & 8'x18'
1—P&S—12 fan loopdryer—100"—1946
3—Measure-o-graphs—54"
1—VV—40'x60" Tenter frame
1—VV—64" Buttonbreaker
1—78" Scutcher brass rolls
1—82" tuber, Spare quetch, calendar and pad rolls
1—Hinnekens 20 ton pneumatic embosser
1—Hercules 48" extractor stainless steel basket
10,000 loom weights
1—set 14—109" copper cans
2 V.V. 60" tensionless jigs

MAR-DAY TEXTILES

52-90 BERKSHIRE AVE. PATERSON 2, N. J.
MU-4-5132

FOR SALE

USED & REBUILT
ECONOMY BALING PRESSES
Electric & Hand
All Sizes in Stock

FERTIK & COMPANY
9th & Tioga Sts., Phila. 40, Pa.

FOR SALE STANDARDIZED SUNLIGHT COLOR FADE-O-METER

MADE BY ATLAS ELECTRIC DEVICES, INC.

FS-3839, Textile World
Class. Adv. Div. P.O. Box 12, N.Y. 36, N.Y.

IMMEDIATE DELIVERY

49-US TEXTILE 1950 & 1951 FACE DRIVE HEADLESS PACKAGE DD TWISTERS

8" GAUGE, 160 SPINDLES PER MACHINE. COMPLETE WITH SEPARATORS, 2 MOTORS PER MACHINE, 440 V, 3 PHASE, 60 CYCLE MAGNETIC STARTERS, COMPLETE WITH NYLON BOBBINS AND ALL ACCESSORY EQUIPMENT.

20-US TEXTILE 1951 HI-SPEED REDRAWS

SPINDLELESS, 7" GAUGE, 60 SPINDLES PER MACHINE, MOTORIZED, 3 PHASE, 220 VOLTS, 60 CYCLE

1—ROYLE 400 & 600 CONVERTIBLE JACQUARD REPEATING MACHINE
Phila.-Index

1—1949 GLODDIE QUILLING MACHINE
Belt driven. Complete with motorization and auxiliary equipment.

100—LATE TYPE NYLON CONERS FOSTER 75 A UNIVERSAL 50

Stainless steel emulsion rolls and troughs. Pineapple attachments. L-drive, gear gain. Motorized in units of 12 spindles.

LATE-TYPE DYE HOUSE EQUIPMENT

DYE BECKS

1—3' SHALLOW DYE BECK
Rodney Hunt. Stainless Steel, open top. 1947 model.

JAMES HUNTER 1950 2' SAMPLE DYE BECK
Stainless Steel. Totally enclosed. Complete.

2—BEAM TO BEAM POWER INSPECTION FRAMES
Van Vlaanderen and Progressive. 75" to 64" face rolls. Variable speed forward and reverse.

4—VAN VLAANDEREN TUBING MACHINES
High speed, 70" cloth. 1948-1950 model.

1—VAN VLAANDEREN 70" STAINLESS STEEL DYE JIG

EXTRACTORS

1—TOLLHURST 48" STAINLESS STEEL

1—AMERICAN LAUNDRY 42"

8000-10B BOBBINS
ALUMINUM BARREL 1⅝"
FIBER HEAD 3⅝"
7" TRAVERSE ½" BORE

3 Atwood Model No. 10 Ring Twisters

1948 MODEL—LIKE NEW CONDITION

100 spindles per machine, 7" spindle spacing, 4½ eadie rings. Motorization: 3 phase, 60 cycles, 550 volts. Machines complete with Veeder Root predetermined yardage clocks.

8 FLETCHER 48-49 VENETIAN BLIND LOOMS
24 space 4 shuttle cross shot.

4—C&K VENETIAN BLIND TAPE LOOMS
2 shuttle cross shot string tape.

2—1947 FLETCHER LIGHT NAME TAPE LOOMS
like new condition

YARN-CONDITIONING BOXES

1 LYDON 3 H&W

1948-1951 models. Electric and steam types. Like new condition.

12—1947 C & K TAPE LOOMS
Heavy duty chain heads. 30 space battens, pick clocks, motorized.

1—1952 KAULDER WELDON STAINLESS STEEL DYEING MACHINE
Complete with controls and motorization.

4—1951 STAINLESS STEEL HUSSONG DYEING MACHINES
600 lb. capacity

1—1953 STAINLESS STEEL HUSSONG DYEING MACHINE
100 lb. capacity. Complete with motor.

1—Foster Tensiomatic Winder Model C-T

20 UNIVERSAL SIZERS MODEL 250 LIKE NEW CONDITION

WANTED

CK S-6 AUTOMATIC LOOMS

LATE NARROW FABRIC EQUIPMENT

All items subject to prior sale. *Write, Phone or Wire for Further Information* *This is only a partial listing.*

Wm. Rabinowitz & Sons

TEXTILE MACHINERY, BOBBINS & SUPPLIES

214 - 222 Hamilton Street Phone HEmlock 3-7497 3-7498 Allentown, Pa.

TO COTTON PRINTERS AND FINISHERS:

a once-in-a-lifetime opportunity to improve efficiency, lower costs and make a better product!

We are preparing the inventory of all the machinery of the

Windsor Print Works, North Adams, Mass.

Included will be the latest models of:

Stainless Steel Continuous Drying Ranges · Tenters
Agers · Soapers · Nappers · Loop Dryers
Curing Equipment · Print Machines · Tensitrol Washers
Stainless Steel High Pressure Cans
and dozens of other useful items.

All will be offered soon. You can now acquire modern equipment which will pay for itself in a few years.

270 MADISON AVENUE, NEW YORK, N. Y. TEL. — OREGON 9-3800 440 RODMAN STREET, FALL RIVER, MASS. TEL. — FALL RIVER 5-7871

FOR SALE—PARTIAL LIST

1—D&F Woolen CARD, 3 Cyl. 48"x60", Bramwell Feed, Peralta, 80 End Tape Condenser.
1—Sjostrom CLOTH CONDITIONER (New), Stainless Steel Rolls.
3—P&W DOUBLING, WINDING, MEASURING Machines, 66", 76".
1—P&W SEMI-DECATUR, Cyl. 72"x60" dia., 1949, Air Guider, etc.
3—Whitin BROADBAND FEEDS 48", Mod. Fl, w/11 Conveyors.
4—P&W., Sargent, PIT FEEDS, 78", 48", c/w Reeves Drive, motor.
1—Harwood FEED 72", Type 563, large cap., w/trans. conveyor apron.
1—C&M 54" Atlas #2 Picker or Raw Stock FEED.
3—J. Hunter 60"x30" 4 Cyl. GARNETTS with Hopper Feeds.
1—D&F Napper GRINDER 96".
6—C&K 92" Auto. LOOMS, 4x1, with motors.
68—C&K 82" Veribest Auto. LOOMS, 4x1, Electric Stop Motions.
23—C&K 82" Auto. LOOMS, 4x1, 20 harness head.
18—C&K 82" W3 Auto. LOOMS, 4x1, 26 harness head.
1—D&F KNIT GOODS NAPPER 80", 20, Roll, Gear Driven.
1—McCreary KNIT GOODS NAPPER 60", 10 Roll, Gear Driven.
3—D&F STAPLE OPENERS, B.B. Cyls., 42" dia. x 21½" face.
1—C&M Atlas #3 MIXING PICKER 24", 12 bar.
1—Franke MIXING PICKER 24", with Feed Table.
1—Schofield WASTE PICKER 42", B.B. Pinned Cylinder.
1—D&F SHREDDER PICKER 48", 12 bar, B.B. Cylinder.
1—Gessner Cloth PRESS, 74", Apron type.
3—Foster TUBE WINDERS, Models 101-102.
2—Collins TWISTERS, 200 Spindle, 3¼" Ring, 4½" Ga., 7½" traverse.
2—WOOL SCOURING TRAINS, consisting of Dewsberry Picker, Hunter Scouring Bowls, Squeeze Sets and Stock Dryer.
1—BATT Manufacturing Unit consisting of: 2 Klenk & Miller 2 Cyl. Garnetts 20x60", Atlas Picker, Willow, Floor Apron, Slitters, Oil Spray.
2—J. Hunter #7 Reversible LAPPERS with floor Aprons, Slitters, Windup heads.

McDOWELL ASSOCIATES INC.

General Offices 41-E, 42 Street
New York City 17, N. Y.
Phone: Murray Hill 2-7417

Warehouse No. 1 N. Front
Dock & Water Sts., Hudson, N. Y.
Phone: Hudson 8-3211

ALL Types of Used Machines for Knit Underwear Mills

SCOTT & WILLIAMS and WILDMAN RIBBERS 8 to 16 cut, Sizes to 24"
TOMPKINS SPRING NEEDLE TABLES, All sizes and gauges
WILDMAN SPRING NEEDLE FBSS
WILLCOX & GIBBS FLATLOCKS, MERROWS, SINGER & METROPOLITAN SEWING MACHINES
Also Various types of SPECIAL MACHINES, CUTTING—CALENDERING—PRESSES, Etc.
Send us your Inquiries.

MOHAWK VALLEY KTG. MACH. CO.
Dwyer Ave. at Pixley St. Utica 2, N. Y. Phone 4-8109

Stave & Kessler

TEXTILE MACHINERY
106 KEARNEY ST., PATERSON, N. J.
P. O. BOX 1611,
AR 4-7486
SH 2-4958

WE BUY AND SELL
TEXTILE MACHINERY
THROUGHOUT THE WORLD
GEORGE W. EGAN
"The Machinery Man Known Everywhere"
WOONSOCKET, R. I. - Phone POplar 2-3258

CURING OVEN

FOR SALE—width 8 ft length—15 ft. fully enclosed radiant heat panel with automatic lift device. Complete Honeywell panel controls and recorders. Excellent condition. Oven was used 60" Tenter Frame;

MYLU CORPORATION
Phone 1997 Cartersville, Ga.

"SEARCHLIGHT" IS Opportunity Advertising

—to help you get what you want—to help you sell what you no longer need.

Take Advantage Of It

For Every Business Want

"THINK SEARCHLIGHT FIRST"

LIQUIDATING

PARTIAL LIST

16—50", 56", 60", 70" dye jiggs, all stainless steel, enclosed and open.
2—7' enclosed dye becks, all stainless steel.
5—12' enclosed dye becks, all stainless steel.
1—70" padder, 2 ball bearing rolls, rubber and stainless steel, pneumatic.
2—56" padders, 2 ball bearing rolls, rubber.
2—40' x 60" tenter frames, stainless clips.
1—50' x 80" tenter frames, stainless clips.
1—70' x 144" pin tenter frame, enclosed.

1—3 arm skein dyer, stainless steel.
1—30" extractor, stainless steel basket.
1—54" embosser, hydraulic, 2 rolls, spare rolls, ball bearing.
1—50" calender, 3 roll ball bearing, static eliminator.
1—66" Henniken boil-off machine.
6—24" x 18" diameter, rope squeezers.
4—48" mangles, 2 rolls, guiders.

WE WELCOME YOUR INSPECTION

SOUTHERN OFFICE
IPA SOUTHERN, INC.
610 S. Carolina Nat. Bk. Bldg.
Greenville, South Carolina
Tel: 2-3561

IPA

NORTHERN OFFICE
INDUSTRIAL PRODUCTS OF AMERICA
140 Market St., Paterson, N. J.
Tel. Sherwood 2-6614 Cable: Texindus

COMPRESSORS VACUUM PUMPS

For the Finest in Rebuilts

1902 AMERICAN 1956

93 CFM 100 psi 7x6 Ingersoll-Chicago
137 CFM 100 psi 7x7 Ingersoll ES1
173 CFM 100 psi 9x8 American-Ingersoll
234 CFM 100 psi 9x9 Chicago (St.) New
254 CFM 115 psi 10x10 Ingersoll ER1
283 CFM 35 psi 10x7 Ingersoll ES1
290 CFM 75 psi 10x9 Ingersoll ES1
354 CFM Vacuum 14x5 Ingersoll
364 CFM Vacuum 14x6 Ingersoll
368 CFM 100 psi 12x10 Ingersoll ER1
434 CFM Vacuum 14x7 Worthington HB
464 CFM 100 psi 12x11 Worth. HB
502 CFM 125 psi, 12x13 CP-T
593 CFM 100 psi 13½8x8 Ing. XRE 100 HP-3-60-440-.8 PF
622 CFM Vacuum 18x6 Ing.
686 CFM 100 psi 14x13 Ing. ES1
730 CFM 50 psi 15x11 Ing. ES1
1600 CFM 40 psi Fuller C-200-Syn
1717 CFM 20 psi 23x13 Ing. ES1
2018 CFM Vacuum 26x11 Ing. ES

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1546 CFM 100 psi 21x12½x14 Chic. OCE
250 HP 3-60-2300

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Dell & Tex Streets — North Bergen, N. J.

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1—Smith-Drum Cascade 3-Arm Skein Dyer
1—Curtis & Marble 72" Cloth 1 Yard Folder
1—Parks & Woolson 66" Single Blade Shear, 1953

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3—150 gal. S.S. Tanks, bottom outlet
1—V.V. 72" Decatur
1—V.V. 52" Decatur
1—30" Hercules Extractor, S.S. Basket
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3—72" Werner S.S. Jiggs
2—50" S.S. Totally Enclosed Jiggs
4—64" Measuregraph Tubers & Examiners with reverse
1—64" Hermas Tuber & Examiner
1—L-6 Nash Pump, Motor, Strainer & Tank
3—Maxon Burners
1—54" x 40' Tenter Frame, S.S. Clips
4—Beamers 50" to 66"
1—Venango 200 lb. S.S. Paddle Dye Machine, totally enclosed
1—50" Werner S.S. Jigg
2—60" Eastwood Floppers
2—600 H.P. B & W Water Tube Boilers, working pressure 175 lbs.

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Additional Wanted Ads on page 220

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1—Abbott Filling Winder, 100-spindle, 1948
2—Terrell Bobbin Strippers, Model L, and Hoists
8—Cloth Inspecting Machines, all styles, 50"-60"
1—Uster Portable Warp Tying Machine
2—B/C Portable Tying Machines—1 LS, 1 LL
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1—H.&B. 1919 Twisters, 4" gauge, 3" ring, 120 spindles
2—#50 Cone Winders—1 with Gear Gainer
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84 sp.—Whitin-Schweiter Winders, 1944-1951
49—Fletcher Downtwisters, 100-spindles, 6½" gauge
1—Lyden Yarn Conditioning Oven, Type 5B

3—Reiner Warpers, 1948, Model BW-72
2—Johnson Slashers, 1948, Model CS-9
116—C&K W2 Looms, 80" & 82", Convertible 4 x 4
60—Narrow Fabric Looms, 12 piece to 60 piece
48—Draper E Looms, 56" r.s., Dobby, Lane Motion

SUPPLIES

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1 Toledo Fan-Type Grain Scale
2 Toledo Cloth Weighing and Measuring Machines
1 Set Gessner 68" Hyd. Squeeze Rolls
42 C&K W3 Looms, 82" MD
1 Fletcher 48" Extractor, 1948, MD, S.S.

2 Collins Fancy Twisters, 200 Spindles, 4" Gauge, MD
7 D&F 2 Cylinder Worsted Cards, 60"x 54"
12 C&K 82" W3 Looms for Duck, Plastic, Saran, MD
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1—Sargent 48" Duplex Burr Picker, Ser. No. 800, Yr. 1922 with Oiling Device, Allen Steel Blower, Stock Blower, 54" O.S.D., B. Bearing, B.D.
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1—D&F 2-Cyl. 60 x 54 dia. Card, B.D., Breast Type, D&F Burring Front, 15 x 36 Coiler
1—D&F Sgl. Cyl. 60 x 60 with D&F Burring Front, 15 x 36 Coiler. 7" Workers (A Woolen Fin. Cyl. with Wstd. Front) Rebuilt Yr. 1949
1—Whitin Sgl. Cyl. 60 x 60 Rayon Card, Yr. 1939
3—D&F 2-Cyl. 60 x 60 Cards, B.D., Breast Type D&F Burring Front, 15 x 36 Coiler
11—D&F 2-Cyl. 60 x 48 Cards, 2 Lickerin Breast Type 15 x 36 Coilers. (No. 25-26 —8 have a Morrell)
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1—W/S Dual Pin Drafter, Model 2350, Ser. 1112747, with 8 Ball Creel
1—W/S Dual Pin Drafter, Model 2350, Ser. 1112746, with Can Creel
1—W/S Dual Pin Drafter, Model 2350, Ser. 1101030
1—W/S Dual Pin Drafter, Model 2350, Ser. 1101029

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1—Whitin Twister or Redoubler, Mdl. C 72sp. x 5" gauge x 4" Ring, 9⅜" Tr., Yr. 1933, West. 10-HP Motor
2—P-S & S 200 x 4½" P x 3¼" Ring Dolly Roll Twisters, 9" Traverse, M.D. (1951) Return Conv.
1—H&W Yarn Conditioner Type Spec. ST-2, Ser. 227, 1/27/47, F.O. 299
3—Entwistle Ball Warpers w/JS Creels and Stop Motions
1—Creel, Double Tension, 500 ends

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2—Hydraulic Sperry Size 12 Type 37 Filter Presses, with tanks, etc.
7—Bahnson 58' Humiducts, Age 1953
6—Toledo Dormant Scales—(4 Printweight) Exact weight scales, torsion balance scales, Suter Precision Balance Model B, B&S Grain Scales, Christian Becker Grain, Scales, Precision Scientific Co. Vari-Heat, Macbeth Color Lamps, Strobotac
2—Saco-Lowell Evenness Testers
3—Twist Counters
2—Suter Seriplanes, Foxboro Thermo Humidigraphs, Cans, Trucks, Bobbins, Etc.

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1—Rodney Hunt Open Width S.S. Washer, 6 Pneu. Squeezers 60", Age 1951.
1—Amer. Laundry S.S. Cascade Washer.
3—V.V. Cast Iron Vat Agers, 30' long x 60" wide.
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7—P&W Chinamen Doublers, 56" & 46".
1—Scott Cloth Tester, Model J2.
2—Monroe Calculators, Model CAA.
2—Underwood Sunstrand Electric Payroll & Bookkeeping Machines, age 1952.
1—Addressograph Unit with Graphotype, Model 1900.

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1—David Gessner Semi-Decater, 72" w/ pump.
1—Uxbridge Gentle Air Slasher, 82" headway, 1950.
18—Lowell 40" Cards, 28" Doffer.
2—Foster 102 Cone Winders, 120 spdls., ea.
1—Cocker Ball Warper with Creel.
1—Foster Model 57 Doublers, 100 spdls., 1950.
11—Werner S.S. Dye Jigs, 70", 1954.
2—Saco-Lowell Lap Winders, Model 37, 1949.
1—Barber Coleman High Speed Quiller, 30 spdls., 1949.
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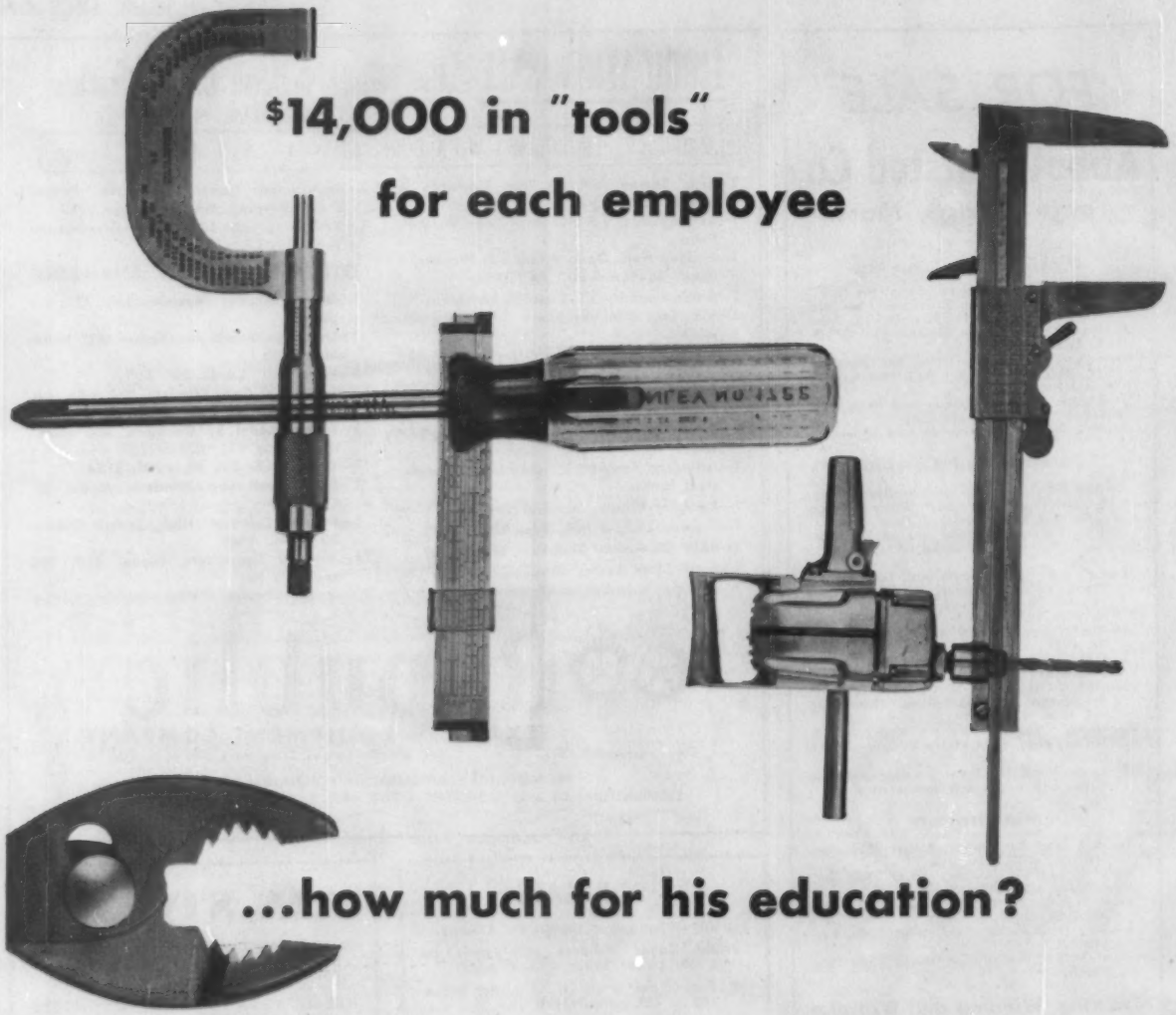

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B. Building Construction and Maintenance, Paints, Yard Equipment, Water Supply.
C. Chemicals and Dyestuffs.
D. Cleaning Equipment.
E. Dyeing, Finishing, and Cloth Room Equipment and Supplies.
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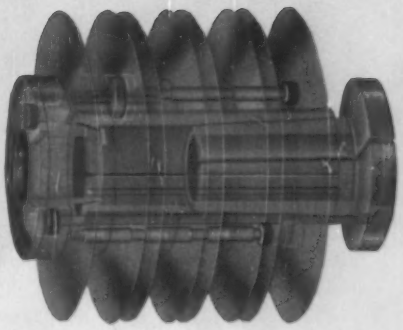

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Century Electric Co.	51	F
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Dow Chemical Co.	48-49	C
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Allied Chem. & Dye Corp.	167	C
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Globe Dye Works Co.	172	G
Goodrich Chem. Co., B. F.	20	C
Goodyear Tire & Rubber Co., Inc.	15	C
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Haskell-Dawes Mach. Co., Inc.	192	T
Hayssen Mfg. Co.	162	P
Herr Mfg. Co., Inc.	201	T
Hinde & Dauch	164	P
Holdsworth Mfg. Co., Inc.	126	T
Hubinger Co., The	199	C
Hungerford & Terry, Inc.	229	B
Hunt Mach. Co., Rodney	60	F
Huyck & Sons, F. C.		
Noone Industrial Fabrics Div.	210	F
Hyatt Bearings Div.		
General Motors Corp.	161	O Q
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Loom Service Co.	216					N	
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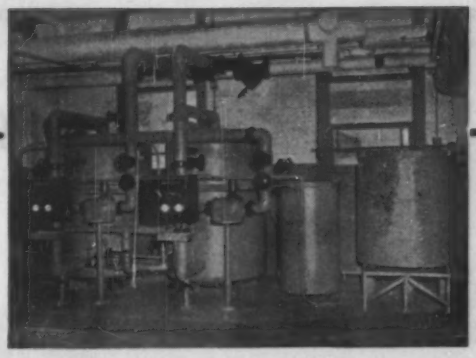
Mount Hope Machinery Co.	160			E			
Muller, Franz	17			E			
Multi-Tex Prods. Corp.	200				G		
Nash Co., J. M.	180						RT
National Aniline Div. Allied Chem. & Dye Corp.	33, 55		C				
National Ring Traveler Co.	168						T
Naugatuck Chem. Div. U. S. Rubber Co.	27		C				
Noone Industrial Fabrics Div. F. C. Huyck & Sons	210			F			RT
Norgren Co., C. A.	47					M	
Olin Mathieson Chem. Corp. Industrial Chemicals Div.	193		C				
Ordnance Gauge Co.	190					I	
Perfecting Service Co.	192				H		
Perkins & Son, Inc., B. F.	38			E			
Platt Bros. Ltd.	124						T
Powell Co., William	12				H		
Powell Valves	12				H		
Powers Regulator Co.	215				K		
Procter & Gamble	72		C				
Proctor & Schwartz Inc.	203			E			
Raybestos-Manhattan, Inc. Manhattan Rubber Div.	46						Q
Refined Products Co.	2nd Cover		C				
Ridge Tool Co.	187				H		
Riggs & Lombard, Inc.	40			E			
Roberts Co.	9						T
Rodney Hunt Mach. Co.	60			E			
Rohm & Haas Co.	163		C				
Ryerson & Son Inc., J. T.	188						O
Saco-Lowell Shops	28, 128						T
Shawinigan Resins Corp.	39		C				
Semet-Solvay Petrochemical Div. Allied Chem. & Dye Corp.	53		C				



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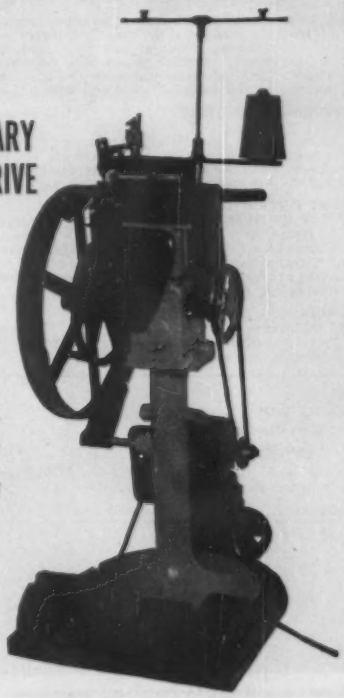

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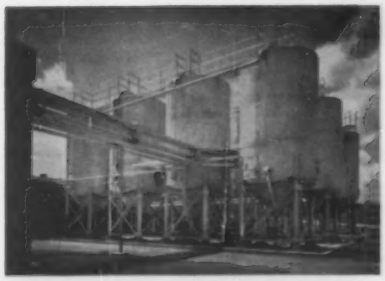

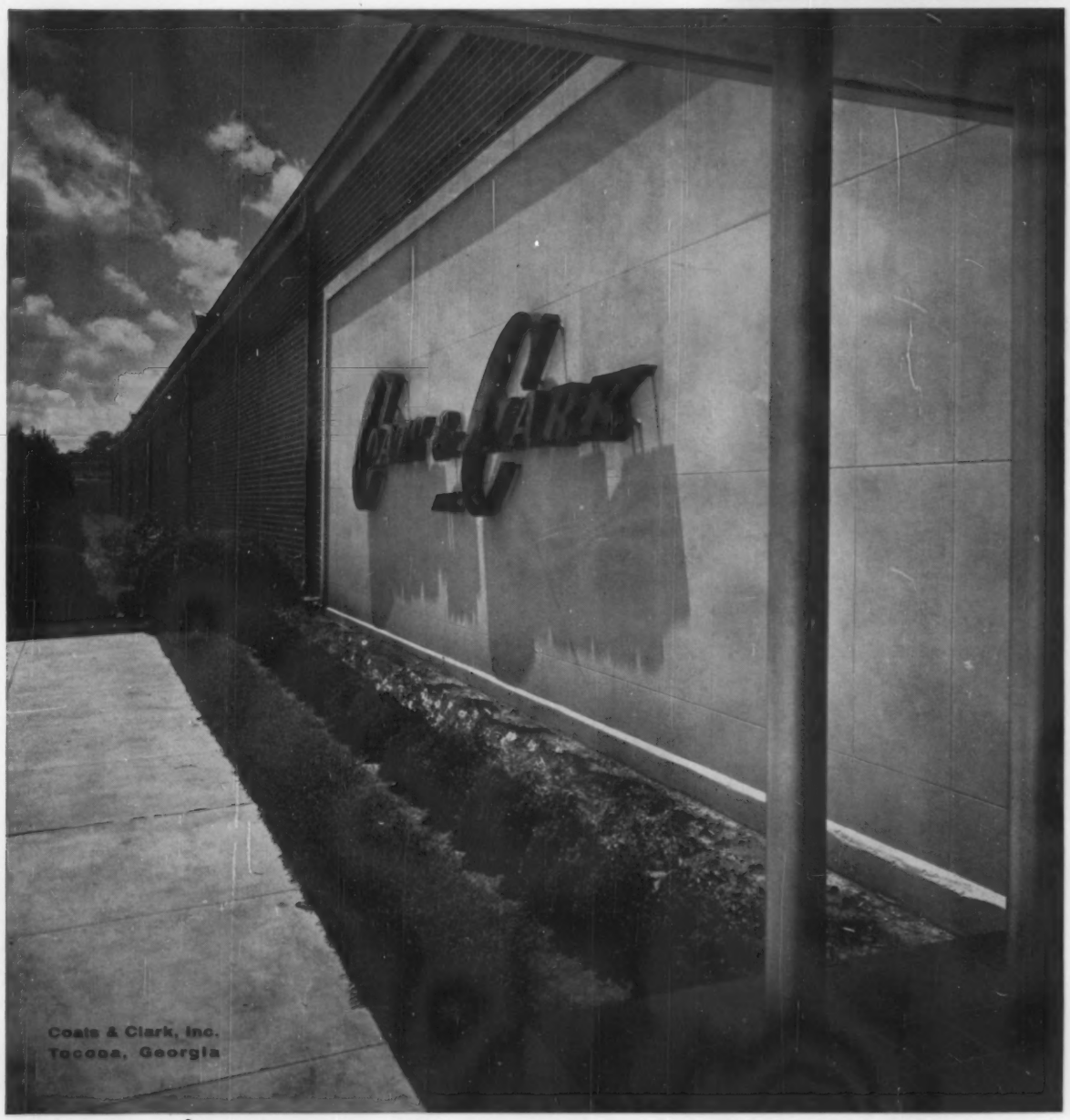

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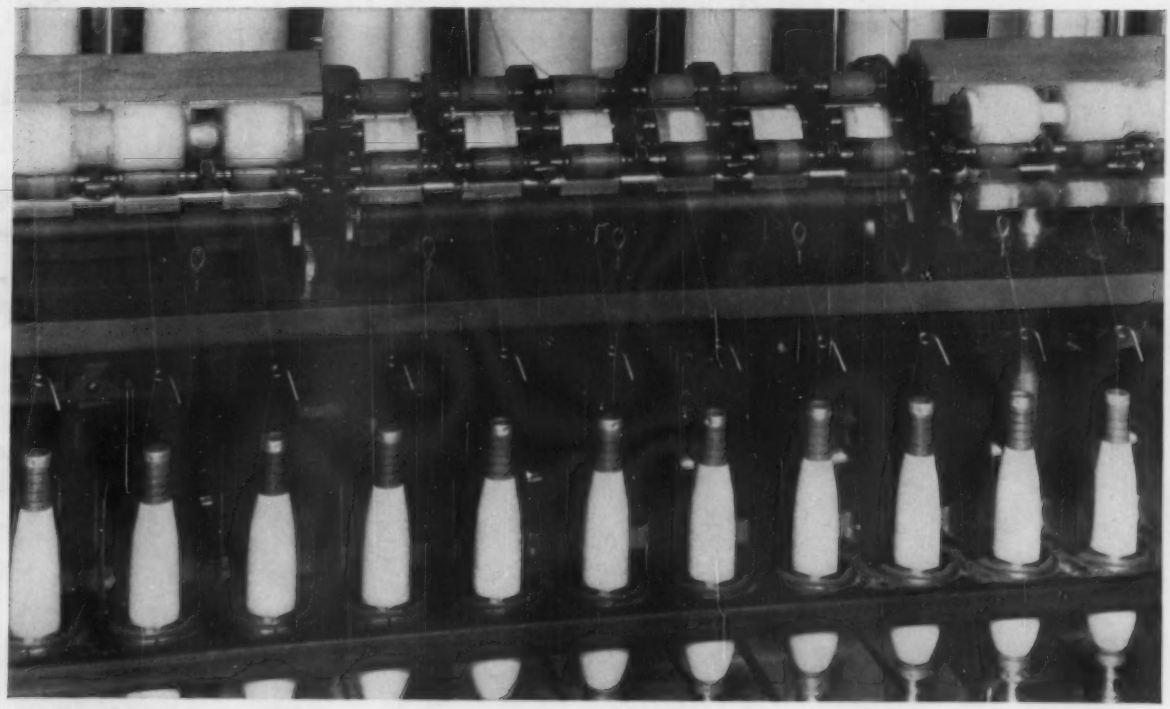

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